4TH YEAR PROJECT

FINAL TECHNICAL REPORT

BSc (Honours) in Computing

Specialization: Data Analytics

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Declaration Cover Sheet for Project Submission

SECTION 1 *Student to complete*

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SECTION 2 Confirmation of Authorship

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Executive Summary

The purpose of this document is to show how an Android App was development by using MapBox API, GPS, Android studio, MySql and Cloud 9. There are some tools that the developers need to be fully pay attention on when choosing. That it's important to have a current device.

That making android apps is getting easier everyday with the come out of Android studio because eclipse had some flaws to deal with.

I was trying to use the Google API for the main map function, but I found some brand phone in China that cannot the Google and it makes the map cannot show on the phone. That is the main reason I move to the MapBox API, it can work on all the Android phones, but the MapBox API is very less function than Google API, that is the reason, I need spend more time to make the map design for the map part.

And in my case, I used SHA1 as encryption, not the MD5 for user login, SHA 1 IS older a bit outdated so use salt to make it current. But it will be faster than MD 5.

What I have to kept in mind throughout development is to make the project is easy to use without any IT skills, keep users information safe, and can truly help people in life. From the last months' study, I learned to use the MapBox API for design the main map function and the GPS function works for track the users to make sure the time calculate function can work when the user in the zone that they made.

The end goal is, when people download the app from the Google Play, and use it. They will realize, this app is managing time better than before and make life easy.

1. Introduction

For this project, I am going to make An Android Phone App. I want this app can help users to calculate their time spending for everywhere. I am going to use the MapBox API for the map function. And I also will use the GPS function for this App's main function to make sure when user create a zone and the app will know the user is in the zone or out of the zone. The time calculate function will help users to store how long did they spend in the zone that they created. And the stats will show the diagram to the users to see the result and can compare between two or more places time spend. The most interesting function should be the task reminder, It can let user create a task and remind the users if they get archived or not. It also can share to the friends by Facebook, message or any software.

1.1 Background

Time is flying, life is busy, some people always confuse where is my time going? And some people always ask: Why is my time always not abundant?

We work, study for every day, and we all forget the most important thing that is manage time. If you want manage your time well, firstly, you have to know your time spending.

You do not need worry anymore, because my app will help you.

The main reason I want do this app because I want people can manage their time more and more better. And can save more time spend with their family, pets, friends or even more work out.

This app will allow users create their own zone and called everything they want. And the time calculate function will calculate how long the users spend in, and next time when the users go into the same zone, the time calculate will automatic store for users.

For example, in the first week if a student in college goes gym for 4 hours, this app will calculate that time spend. Them knowing this will make them proud and hopefully more motivated to go again next week. Students can set goals, if the first week they went for 4 hours, next week they set a goal to go for 5 hours. This can be the same as doing work in a lab. This app will calculate the time in the lab and it will tell how long students attend in lectures. This is a good way to keep track for yourself and to let u know if you are spending enough time in class.

This app the help you calculate time spending and have a look, find out which part you should spend less time or more time. Make our life more efficient and easier.

1.2 Aims

The aims of the project are to develop a mobile app called MyTime that will give detailed information for the users' time distribution.

Our customers/users will be smart phone users of all ages with an interest in to know their own time distribution and help users to re-plan their own time to make it more efficiently. And the app includes the MapBox API for the main map function, so the user can clear to see where he/she is, especially those who have a desire to have an aim of any special work like 8 hours for gym per week, 15 hours for library per week… The app will help you to calculate and give you a feedback, then the users can clearly see that they reached the goal or not. And the user also can make the task, the app can remind the user if archived or not.

For example, the when user open the app, it will ask the user to log in if already has a user name and password, the new user should go register function to get the username and password. The app will show the map firstly, then, user can create a zone called gym, the description called work out, the distance is 200 Square meters. The app will help user to calculate how long stay in this zone, and if the user carry the phone leave this zone, the time calculate will stop, and show the result to user. The user can also user choose any time or day to see the data and the data can be shown by the diagram like bar chart and line chart. And the filter function will help user to choose any place can be shown or not and it also can use filter to choose two or more results to compare, it can easier to find out which one is the highest and which one is the lowest. It can help user manage their time easier.

Finally, the user can check the data by every day, week and month, even year, the data can be shown by number and diagram.

Every place that the user created will be saved in database, and next time when user come in, the user does not need create again and the time calculate function will auto work.

1.3 Technologies

Android Studio is the official IDE for android platform development and is freely available under the apache license. It is designed specifically for Android development and I am using it to develop the app, as thus far the app is exclusive to android.

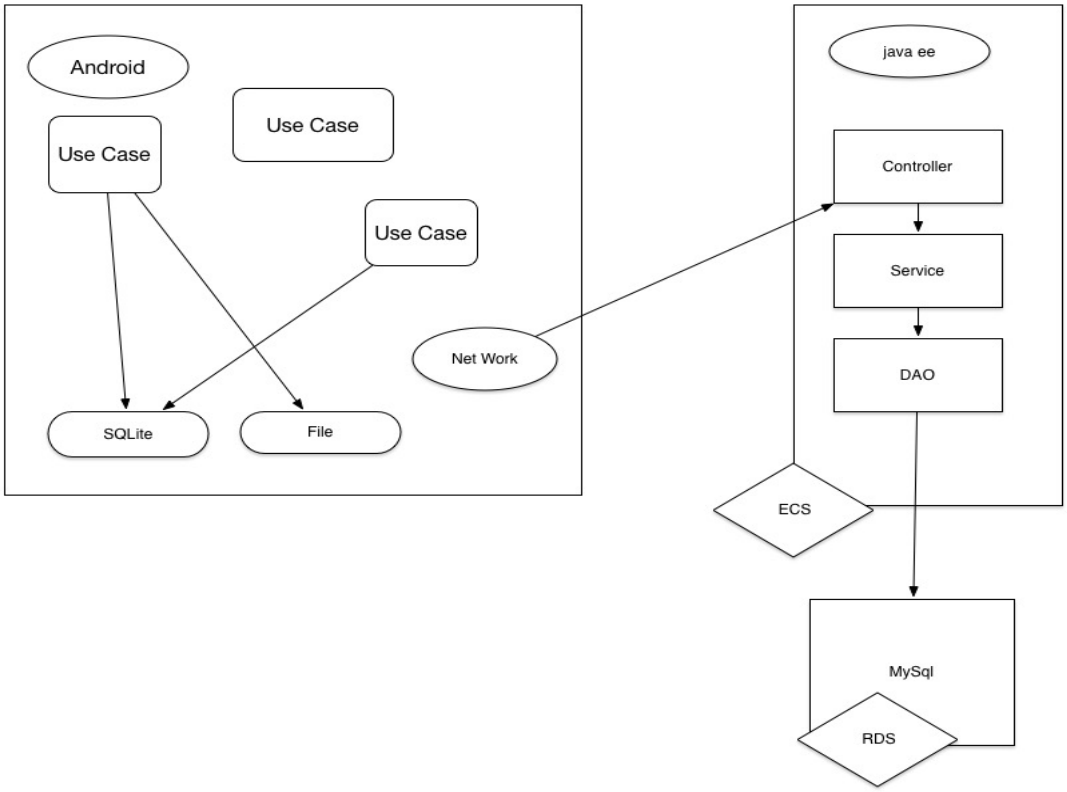
Main research and study is for MapBox API, android native development, and the data structure design and development. The GPS function is also important part for the whole app, it need used to track.

For the requirements, I made a questionnaire to 50 people and find out what is the favourite function of the app that the user want. And I found some book for the

Phone App business requirement. That is very helpful to make the app much more better than what I designed for the proposal.

For the data, I used the C9 for data part, because C9 is free to use and C9 provides a very good service for developers. It gives command line for debugging and connection to MySql, instead of having PHP admin, C9 has everything there more less.

1.4 Structure



2. System

2.1 Requirements

The system should allow the user to create their own zone and name on the Google map, and the app will help to calculate how long spend on this place, then the app can help users to analysis the data and shown by the diagram to users. The users can also use filter function to add or remove any place that they have created on the map by using this app.

The app should be user friendly. A person with basic knowledge on mobile operations and/or computer knowledge should be able to navigate through various sections of the app without difficulty.

2.1.1 Functional Requirements

2.1.1.1 Navigation:

- The application must make seamless transitions between activities or pages.
- Different pages must be defined clearly for the user.
- Features must be clearly visible to users.
- Available options on each page should be clearly visible to users.

2.1.1.2 Auto Time Calculate:

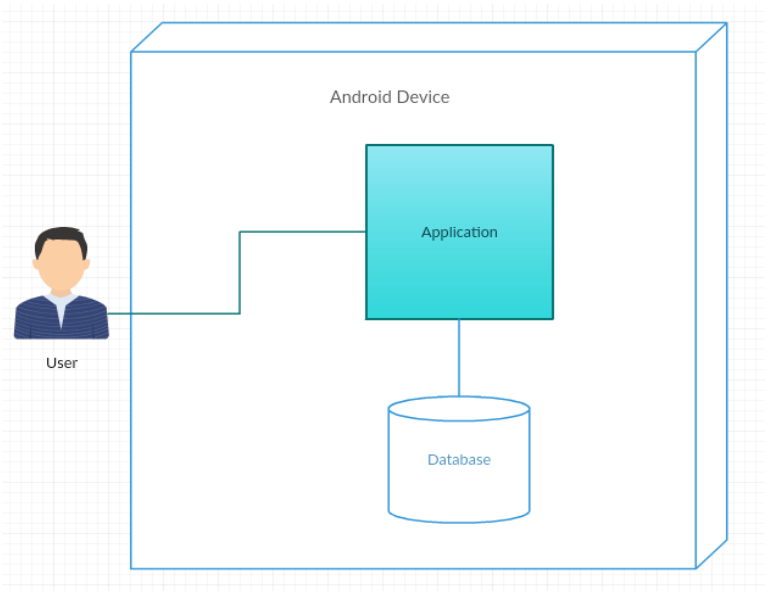
- The GPS function should open on the phone.
- The time calculate function should auto work when user into the zone.
- Auto time calculate function can work without the internet or WIFI.
- Auto time calculate function should auto stop when user out of the zone.

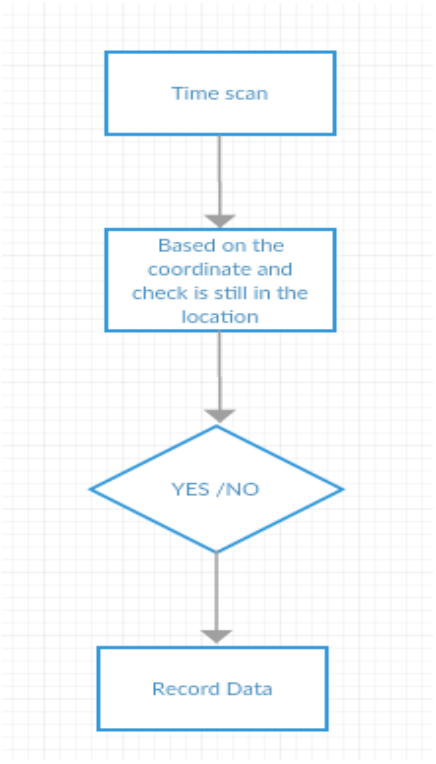
2.1.1.3 Profile:

- The user shall be able to create a personalised username.
- The user shall be able to create a personalised password.

2.1.2 Data Requirements and Architecture

The following is a representation of the system architecture. The application will be hosted locally on a device running the Android system. The application will have a backend database that will store all the resources.





- Database must be constantly available for new user registration.
- Database must be updated upon new user registration.
- Database must not accept the same username more than once.
- Database must not accept the same password more than once.

2.1.3 User Requirements

- A user shall be required to have WI-FI or Internet enabled on their smart phone/device
- A new user shall be required to register or use a provided login method to gain access to the main features of the app.
- An existing user shall be able to login in using username and password or the alternate login method provided.
- Users shall be able to use the app from any smartphone/device that uses Android Operating System 2.3 Gingerbread or higher.
- For the Auto Timer feature to work a user must be able to stay in the zone that the user created.
- A user shall be able to back to home screen on the phone and the Auto Timer feature should keep working.

2.1.4 Environmental Requirements

- Get the internet on the smart phone.
- Get the GPS open on the phone.
- Create a zone and design the name and distance of it.
- Use Filter to add or remove any zone.
- Choose any date that want check the data.

2.1.5 Requirement 1: Start Application

2.1.5.1 Description

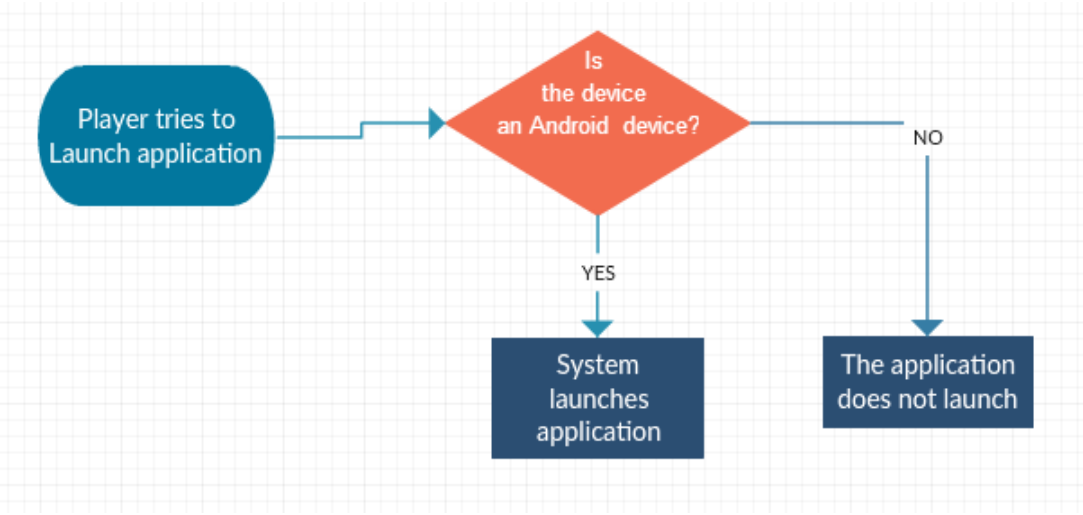
This is the most important requirement that the app cannot be used if the hardware cannot launch the map or application, even GPS.

2.1.5.2 Use Case

Scope

The Scope of this use case is to describe how the user can launch the app.

Use Case Diagram



Precondition

The application was downloaded and installed on a piece of hardware that runs the Android system.

Activation

This use case starts when a user wants to launch the application.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. User clicks on the MyTime icon in his/her Android device application menu	2. Launches the application

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. User clicks on the MyTime icon in his/her Android device application menu	2. The application does not launch as the operating system is different from the perquisites and requirement specifications.

Termination

This flow terminates once the system is booted up

2.1.6 Requirement 2: Log In

.2.1.6.1 Description

The user need to login. This requirement is very important as it is essential for the system to start.

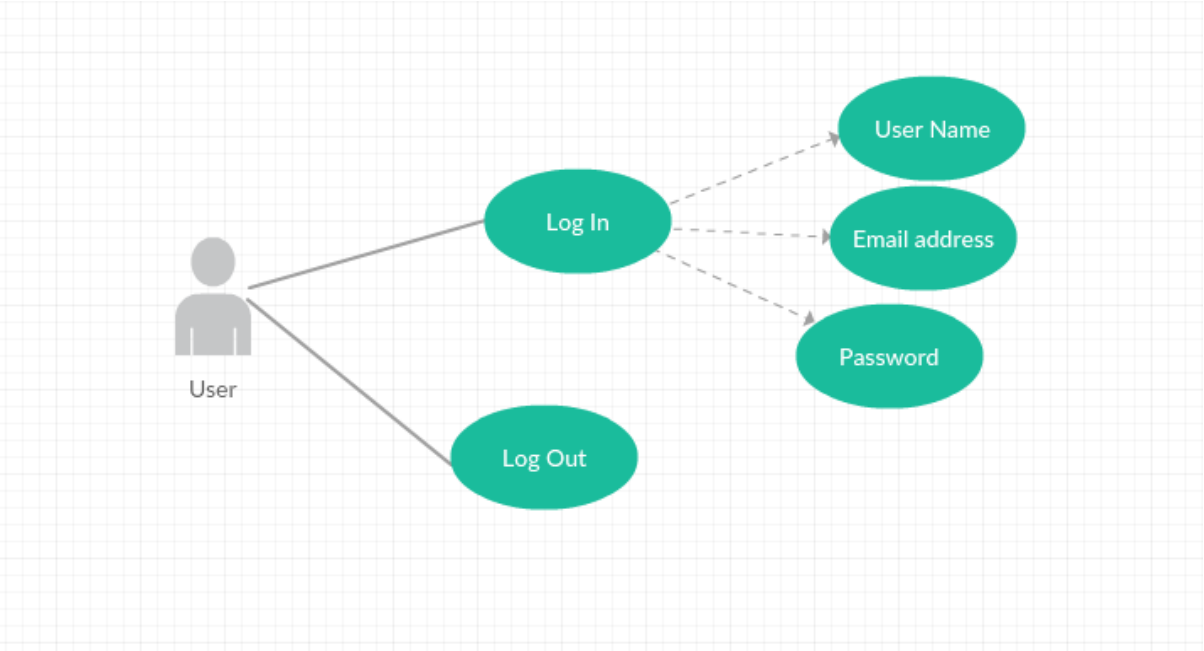
2.1.6.2 Use Case

Scope

The scope of this use case is to allow users to login.

Use Case Diagram

This use case describes the process of the user login in.



Precondition

The user need registered and has a username, password to log in.

Activation

This use case starts when a user first time launch the application.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. User type in the username and password	2. Launches the application

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. User type in the wrong log in details	2. The application does not launch as the wrong personal details, the user need re-type in the right one.

Termination

The system presents the next option to the user.

2.1.7 Requirement 3: Register

2.1.7.1 Description

The user need to registered. This requirement is very important as it is essential for the system to start.

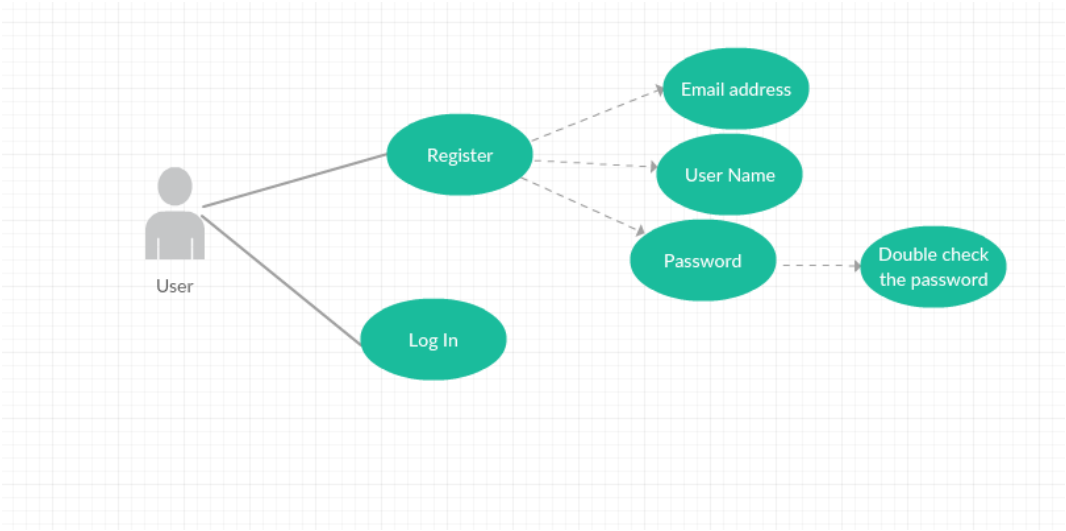
2.1.7.2 Use Case

Scope

The scope of this use case is to allow users who does not has a username to log in that the user can go to register.

Use Case Diagram

This use case describes the process of the user register.



Precondition

The user need registered and has a username, password before log in.

Activation

This use case starts when a user does not has a log in detail to run the application.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. User type in the username, email and password	2. Launches the application

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. User type in the wrong password or username or both.	2. The application does not launch as the wrong personal details, the user need re-type in the right one.

Termination

The system presents the next option to the user.

2.1.8 Requirement 4: Add new location/ new task

2.1.8.1 Description

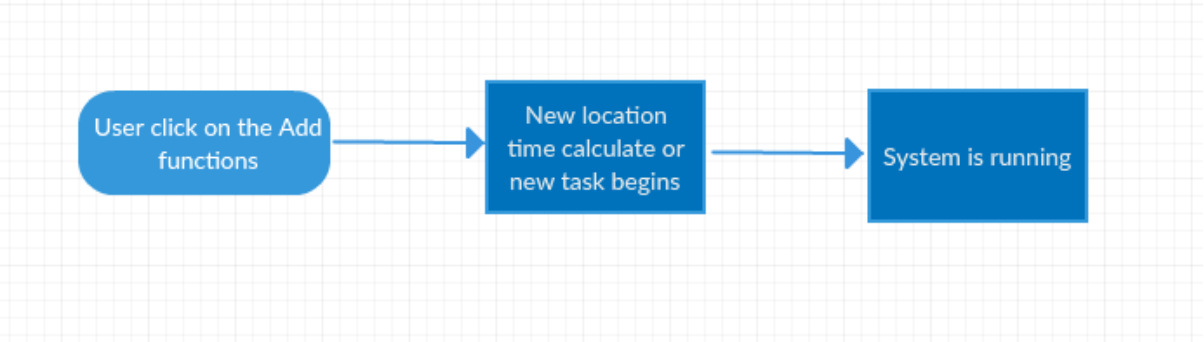
Second in the priority list is the Add function that allows user add new location and task. Once the application has been booted up, the user must now be able to choose the “Add new location” or “Add new task” option in order to begin the whole app process.

2.1.8.2 Use Case

Scope

The scope of this use case is to describe how the user can start the add new location on the map to calculate time or add new task for themselves, once the system has booted up.

Use Case Diagram



Precondition

The system is running and the time calculate function is working.

Activation

This use case will start when user launches the application.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. Player clicks on the “Add new location” Or “Add new task” option.	2.New location mark will show on the map and new task will show in the task list. And time calculate function start to work.

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. User DOES NOT click on the “Add new location” or “Add new task” option.	2. There will no new location mark on the map or there will no new task in the list. The time calculate function is not going to work.

Termination

This flow terminates once the user adds new location or add a new task.

2.1.9 Requirement 5: Task

2.1.9.1 Description

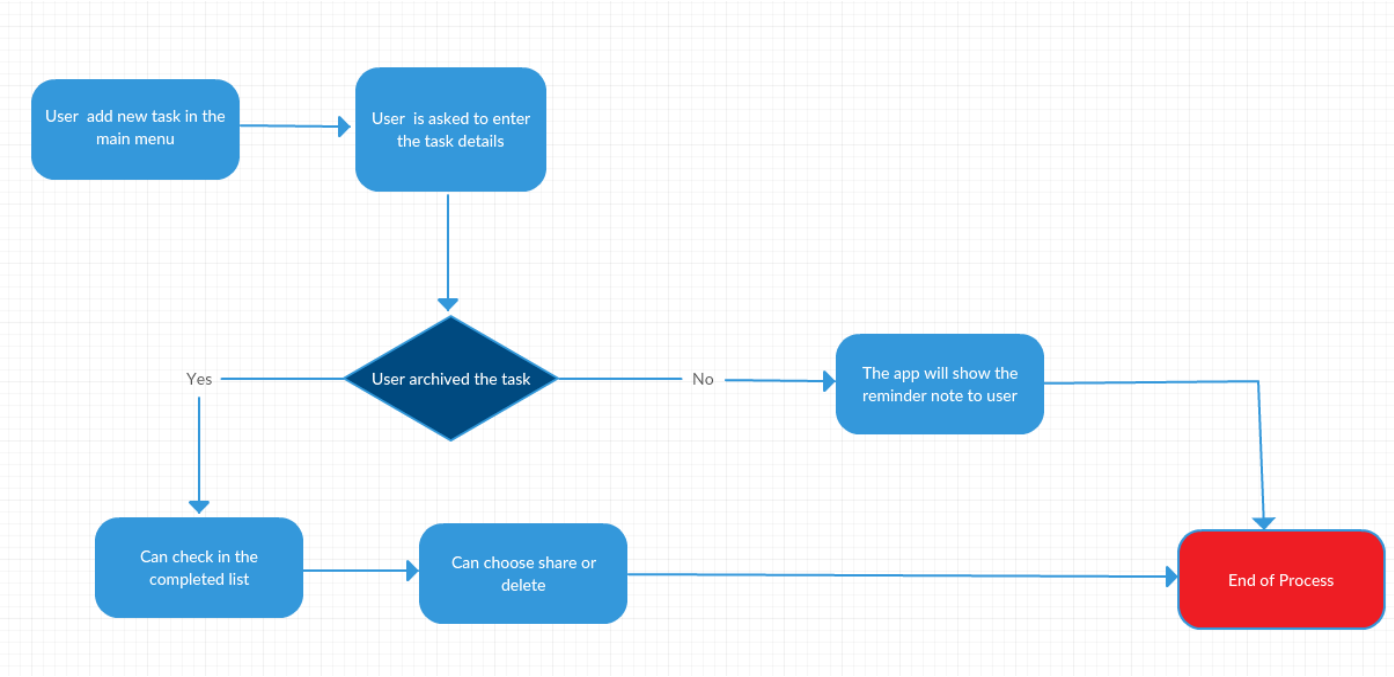
To progress through the task, the user will have to full fill tasks that they made. The tasks can be added by users and include the description of the task, the hours to spend, the reminder note and the start data to end date.

2.1.9.2 Use Case

Scope

Let user can manage their time better, the user can add some specific tasks.

Use Case Diagram



Precondition

The player must add a task and then it can be edit or delete by user.

Activation

The user has to work or stay in the task location area.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. User need add a location for the task.	

2.User need add a new task	3. when enter the task's details, the user need choose the location that he/she added before.
4. User fulfills task.	
5. User go the complete list	6. The archived tasks are shown in the list.
	7. The archived tasks can be share or delete.

Alternate flow

Alternate Course Of Events	
Actor action	**System Response**
1. User add a new task.	2. User need finish the task details.
3. User start that new task	4. Task finish or not.

Termination

The user can add a task in the main map page and the task can be edit in the function list of edit task. That the user also can delete the task if he/she does not want to keep it.

2.1.10 Requirement 6: Auto time calculate when there has Saved Zone

2.1.10.1 Description

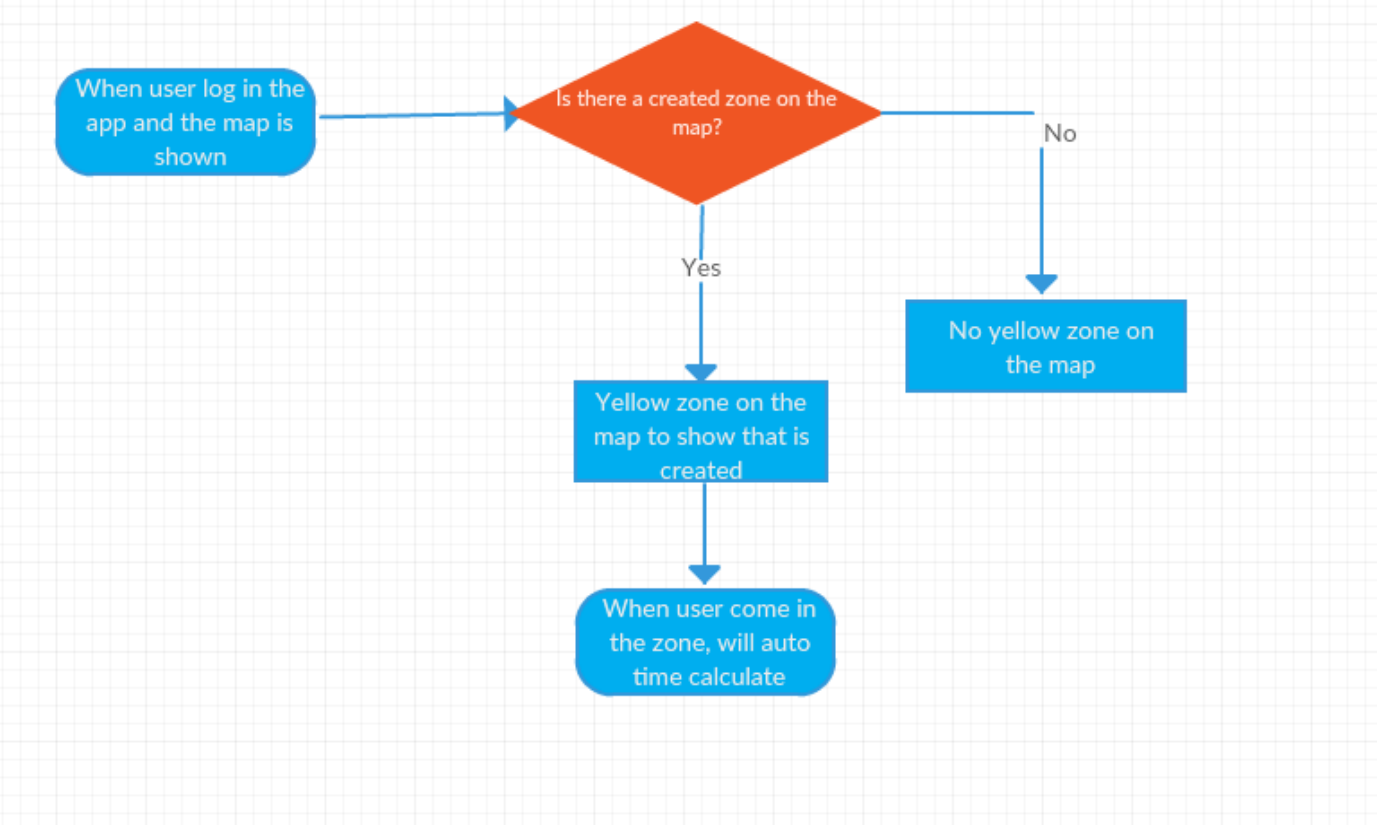
Next is the auto time calculate works when there has saved zone. With this feature the user will be able see the saved zone on the map. This means that the user will be able to shut down the system and come back to see the zone that created before, without losing any created places.

2.1.10.2 Use Case

Scope

The scope of this use case is to describe how the user can load a previously created zone.

Use Case Diagram



Precondition

The system is running and is in a wait state.

Activation

This use case will start when user runs the application.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. The user come in the created location.	2.Auto time calculate.
3. User can delete the created location.	

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. The user come in the created location.	2. No created location, then there is no yellow zone on the map.

Termination

The auto time calculate works when there has created zone on the map, and when the user come in the zone, the auto time calculate works. If there has no created zone on the map, the user should add a new location. The auto time calculate will stop work when user out of the yellow zone.

2.1.11 Requirement 7: Compare with two or more results.

2.1.11.1 Description

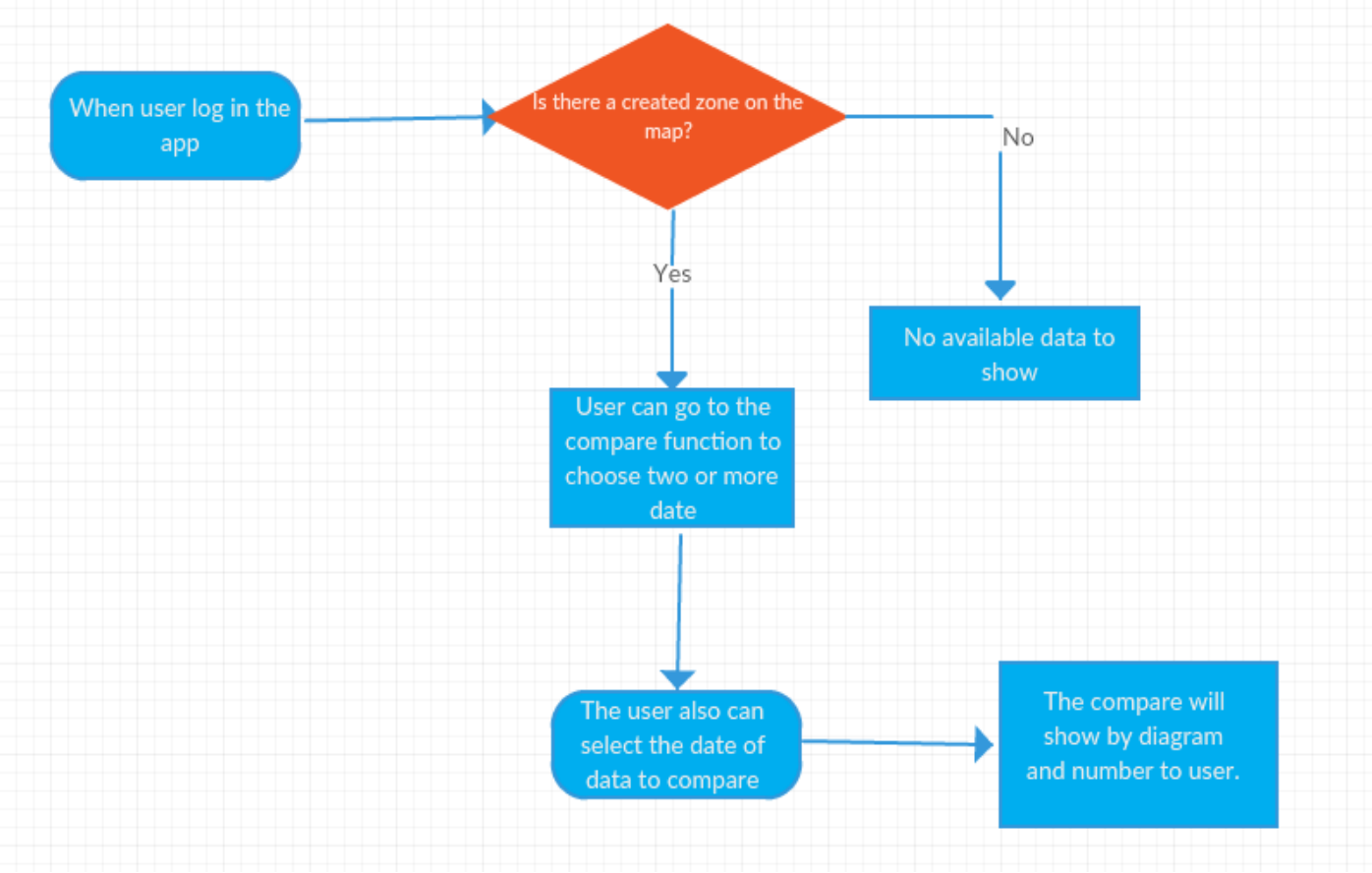
The user can choose two or more created zones(results) to compare and will get the results by diagram. With this feature that user can easy to check the time spend and to manage which place waste more time and should save.

2.1.11.2 Use Case

Scope

The scope of this use case is to describe how the user can compare between two or more created places.

Use Case Diagram



Precondition

The system is running and there are created locations.

Activation

This use case will start when user runs the application and user goes to compare function.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. The user has created at least two locations. And select to compare	2.Show the compare result by diagram and number.
3. User can select date of the locations to compare.	4.The app will give the result based on the date that user select.

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. The user created at least two locations before.	2. No created location, then there is no available location's name can choose.

Termination

When user want compare other locations or log off the app.

2.1.12 Requirement 8: Search Location

2.1.12.1 Description

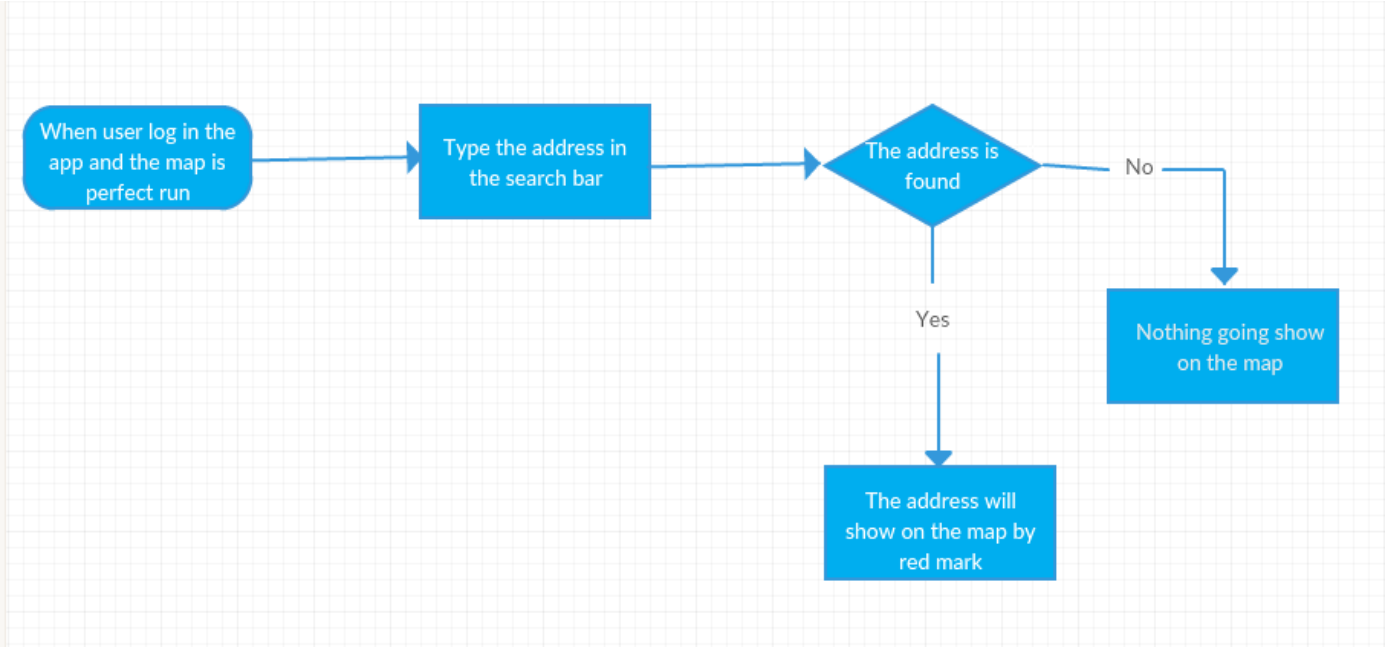
The search bar is working for help user to search the place on the map and there will have a red mark show on the map when user click it shows search result.

2.1.12.2 Use Case

Scope

Help user can find a place they want go directly and faster. Easier than scrolling around map to find a location.

Use Case Diagram



Precondition

The system is running.

Activation

This use case will start when type in the correct address in the search bar.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. The user wants to find a place on the map. And type the address in the search bar.	2.Show the result on the map by red mark.

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. The user type in the un-correctly address in the search bar.	2. No result found. Need re-type in the right address name.

Termination

When user search the other addresses.

2.1.13 Requirement 9: Edit location/task

2.1.13.1 Description

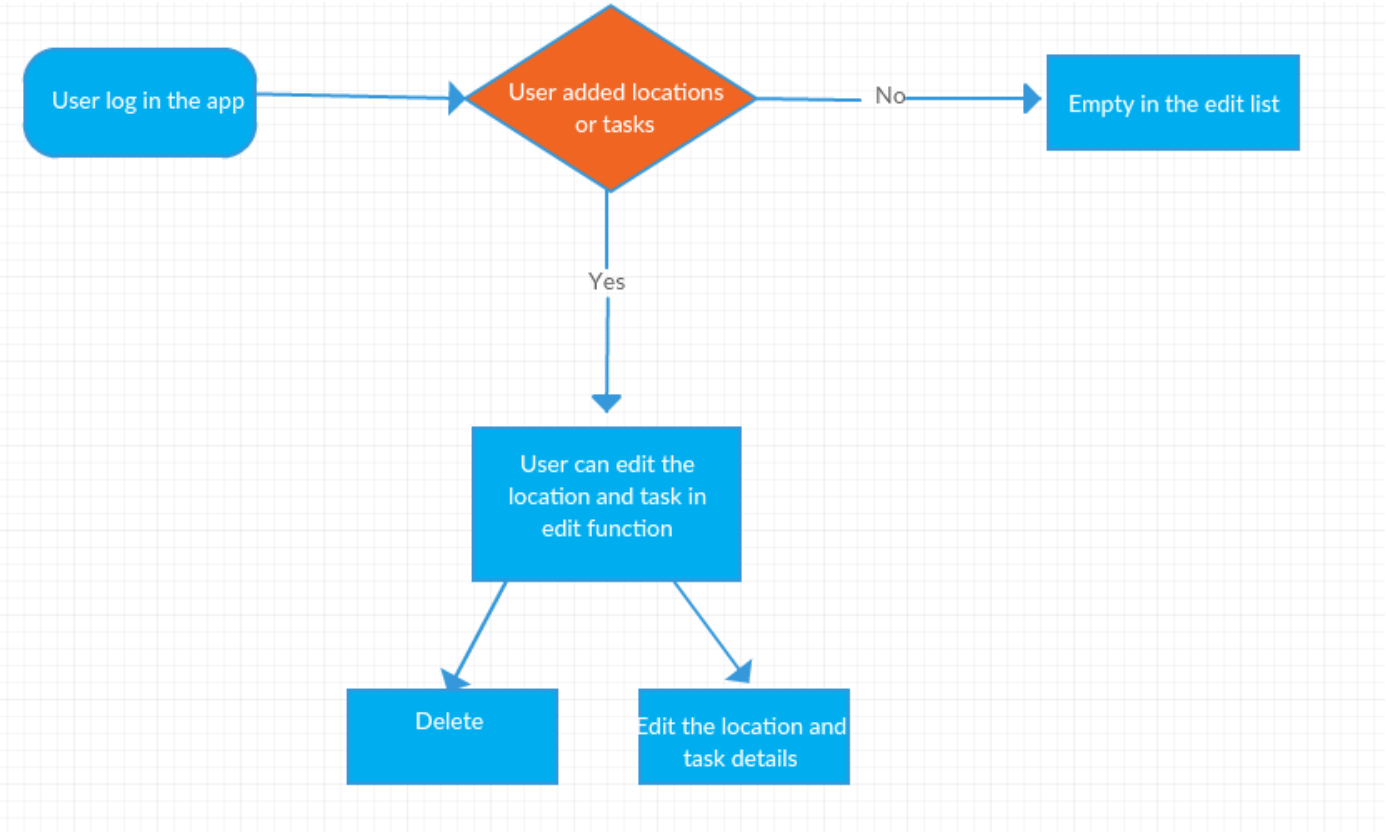
The Edit function can help user to manage the locations and tasks that he/she added before. To change the name, description, size, and so on. And also can delete the locations and tasks.

2.1.13.2 Use Case

Scope

Help user manage the locations and tasks easy. No matter user added the wrong one, it can be edited.

Use Case Diagram



Precondition

The system is running and user added the locations or tasks before.

Activation

This use case will start when user want to edit the locations or tasks what he/she added before.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. The user wants to edit the locations and tasks what he/she added before.	2.The system will allowed user to edit and delete.

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. The user did not add any locations or tasks.	

Termination

After user edit the locations or tasks and click “ok”. Or user delete any locations and tasks.

2.1.14 Requirement 10: Completed task share

2.1.14.1 Description

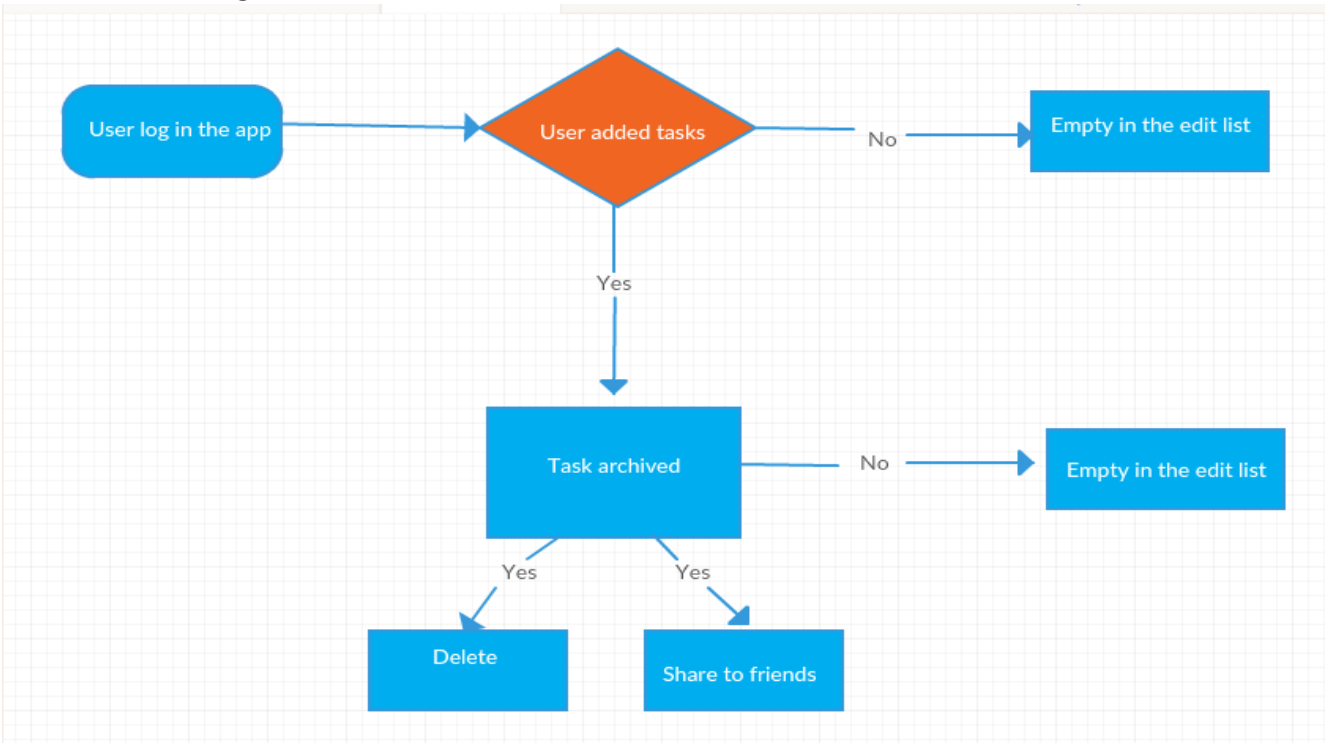
The share function is in the completed part, let allowed user to share the task that he/she archived to friends. And they also can delete them.

2.1.14.2 Use Case

Scope

Help user to share their archived tasks to friends and see how many tasks can you get in one day or week.

Use Case Diagram



Precondition

The system is running and user added the tasks before.

Activation

This use case will start when user get archived the tasks.

Main flow

Typical Course Of Events	
Actor action	**System Response**
1. The user wants to share the archived tasks to friends.	2.The system will send message “xxx has archived any task” by any another software.

Alternate flow

Alternative Course Of Events	
Actor action	**System Response**
1. The user did not add any tasks.	

Termination

After user share the archived tasks to friends or delete the archived the tasks.

2.2Non-Functional Requirement

The app will be built for smart devices that are built using Android Studio, this will make the app available to a wide market with the intention of making it available to IOS users in the future. Android has taken over the market in the last couple of years and has become the most popular OS for smart devices.

Period	Android	iOS	Windows Phone	Others
2015Q3	84.3%	13.4%	1.8%	0.5%
2015Q4	79.6%	18.6%	1.2%	0.5%
2016Q1	83.4%	15.4%	0.8%	0.4%
2016Q2	87.6%	11.7%	0.4%	0.3%

Source: IDC, Aug 2016

2.2.1 Maintainability Requirement

Users can report any bugs to developers allowing the issues to be addressed and fixed.

2.2.2 Extendibility Requirement

After the app is released it can still be updated with additional content. Development of the app will not cease after the initial release.

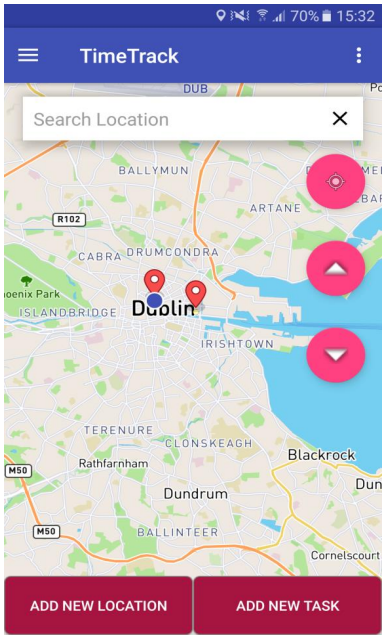
2.3Implementation

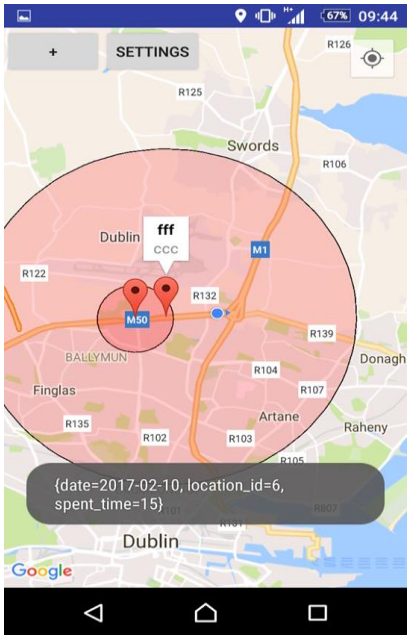
Implementation languages that will be used in this project are mainly java which is the language used when developing in Android Studio. PHP was a consideration for implementing our database. And Cloud 9 is also used for database. Xml is using for the page design and the layout.

For a user to download an Android app they need to access the Google play store, for this a user needs a Google account which would guarantee that if a user can download the app to a device then they can sign in. But I did not put the Google account sing in function, I used own database for let user can register in the app and create their own account to log in the app.

The MapBox API is using by the main map function. I was using Google map API, but when I get the apk and send to my friends to test in China, that they cannot get the map show. That is the reason I move everything to the MapBox API, and after I get the map design done, the map is can be shown on their phone to test.

And for the Android phone, the version cannot under 5.0 to run the app.





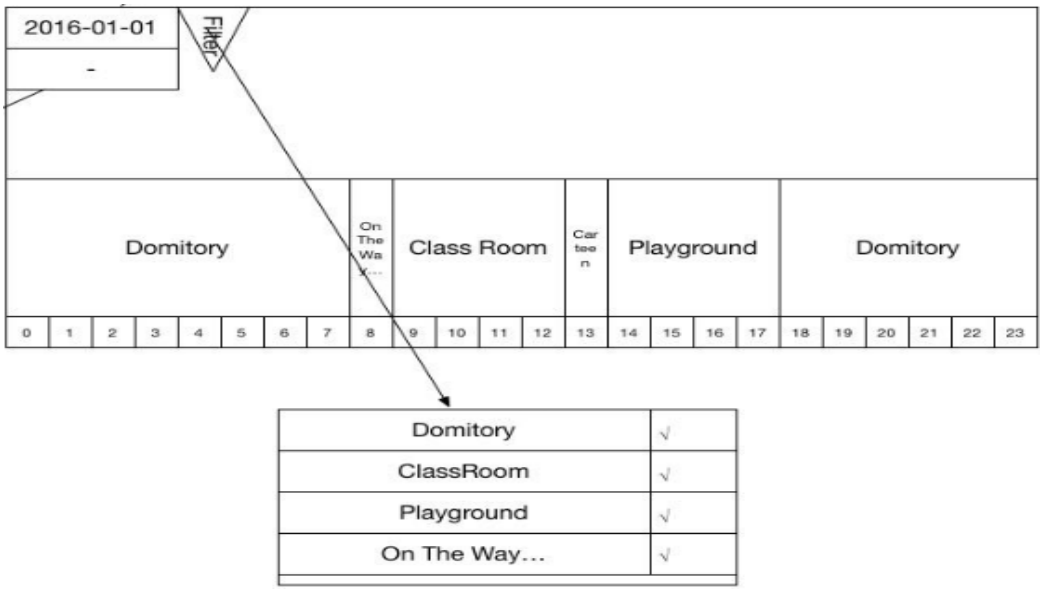
And this is a compare between google map and map box.

2.4Graphical User Interface (GUI) Layout

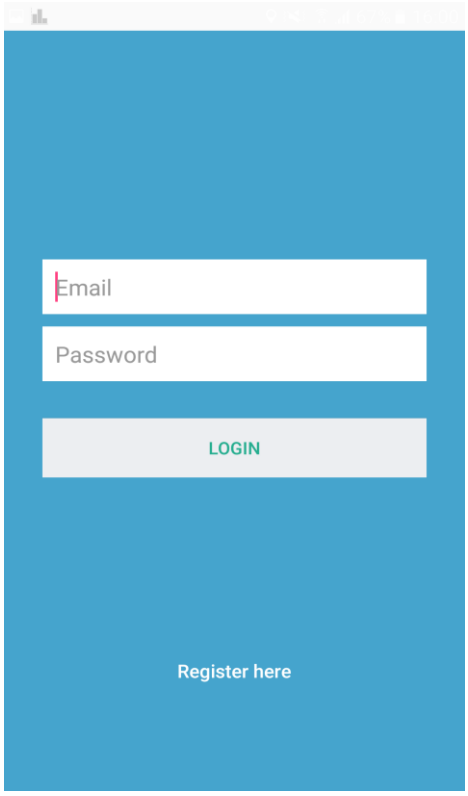
The app will provide the user with 12 different GUI's:

1. Log in page
2. Register page
3. Main page (Main map page)
4. Add new location
5. Add new task
6. Stats 1 (My time result check)
7. Stats 2 (Compare)
8. Stats 3 (Time Distribution Diagram)
9. Edit locations
10. Edit tasks
11. Completed (share tasks and delete)
12. Options (location and time manager)

There have two simple sketches that I made it before the project start and after the project start, I need more functions in the application to make it much more complete than the design.



2.4.1 First Iteration of Login Screen

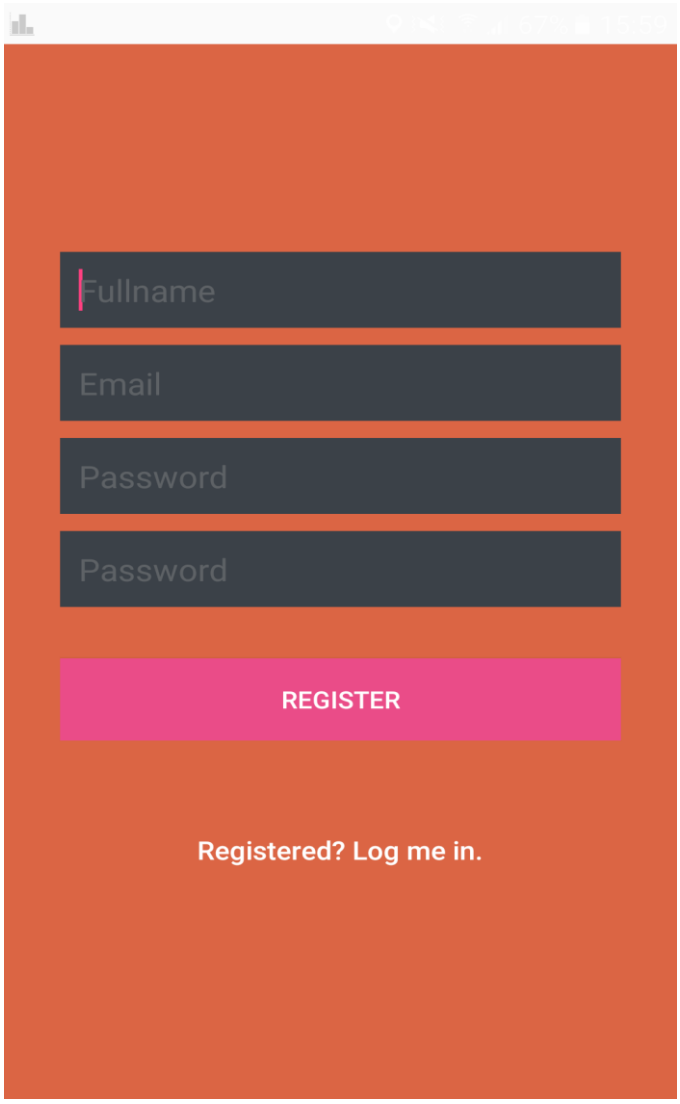


This is the first iteration of a GUI of the user login page.

The system will continue to the next use case when the user presses the 'Login' button if they are registered users.

For the user, need type in the right email address and Password. If one of them wrong, will get an alarm message to let user re-type in. And if the user does not even have a log in account, then he/she can click the "Register here" to register an account for log in the application.

2.4.2 First Iteration of Register Screen



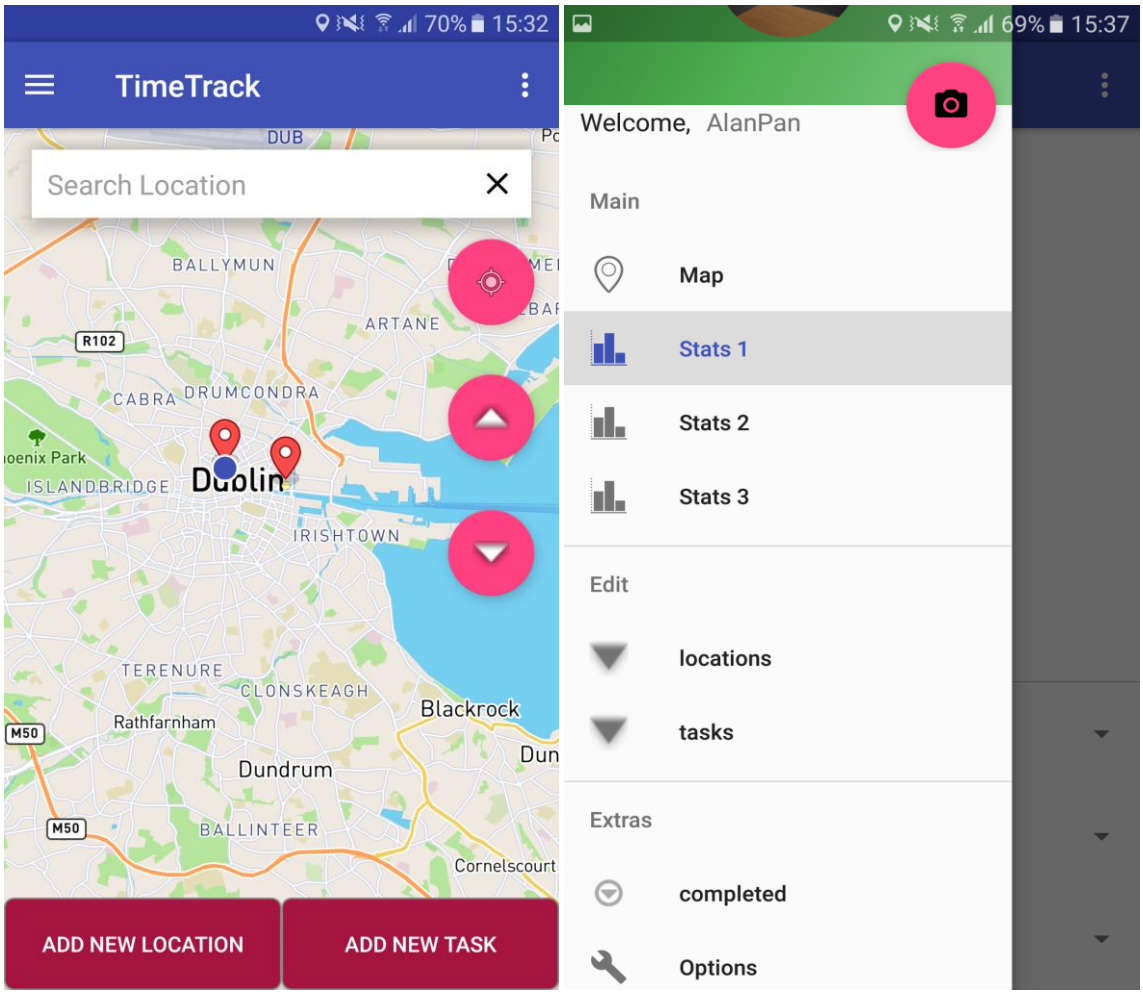
This is the first iteration of a GUI for the user registration page.

The system will continue onto the next use case when the user presses the 'Register' button. After user get registered, then he/she can go to the log in page to log in the system. Get the app start.

The user will be asked to type twice password, and both of them should be same password.

And the when user finish the register, the email and username will be stored in database. That means the one email address only can do one time register, if the user type in the same email address will not allowed to get registered.

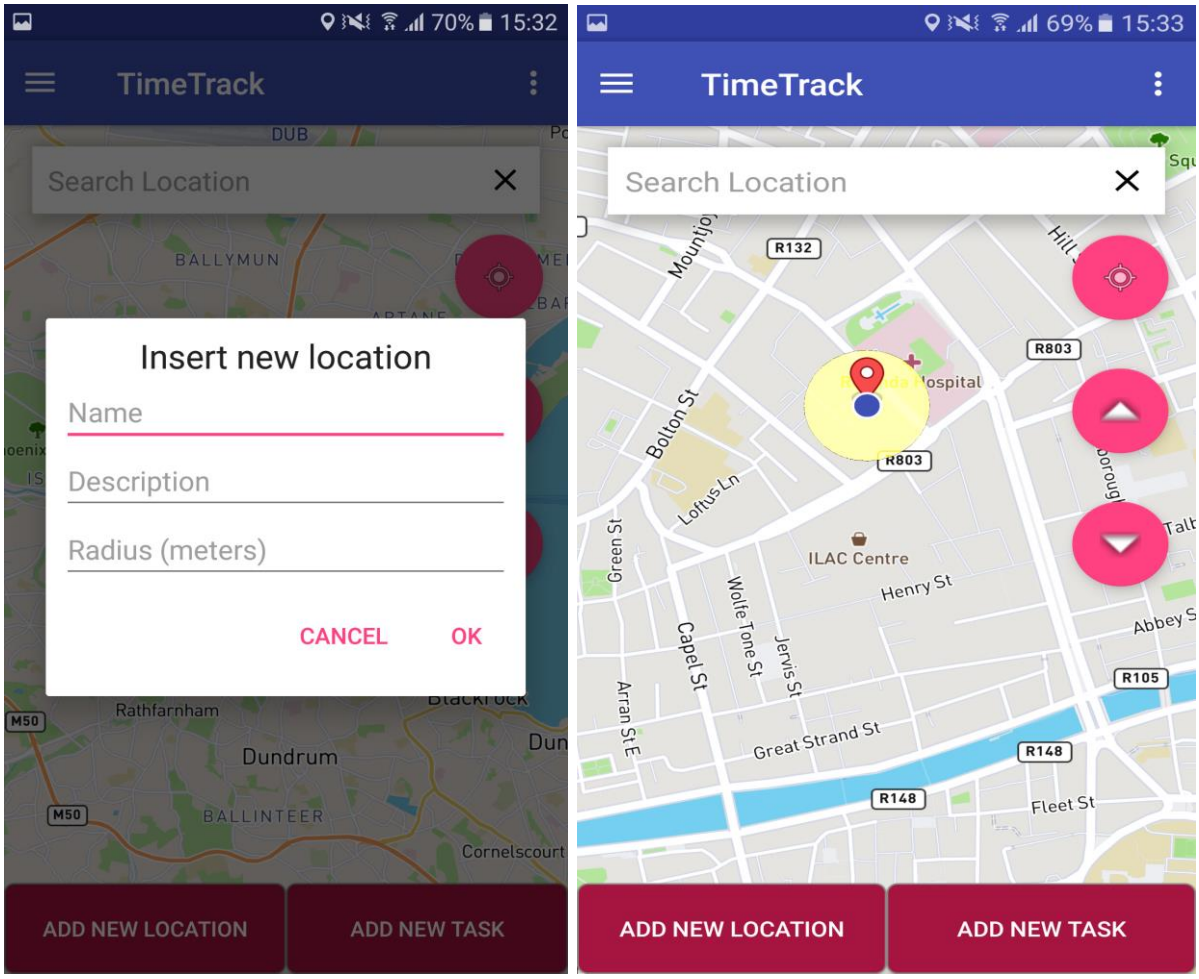
2.4.3 Main page after user log in and function menu



This page is after user log in the app and first page can be seen. On the main page includes the search bar, log out function, main menu, enlarge and Shrink down the map. Track button, add new location, add new task. The two red marks are the locations have been added, and the blue mark is where currently location.

The main menu can check more functions.

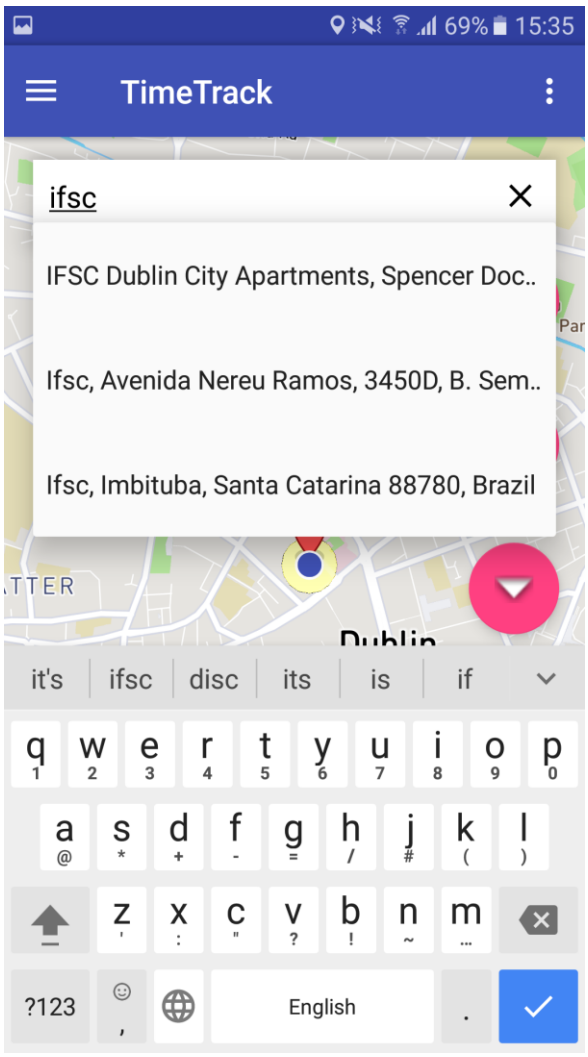
2.4.4 Add new location

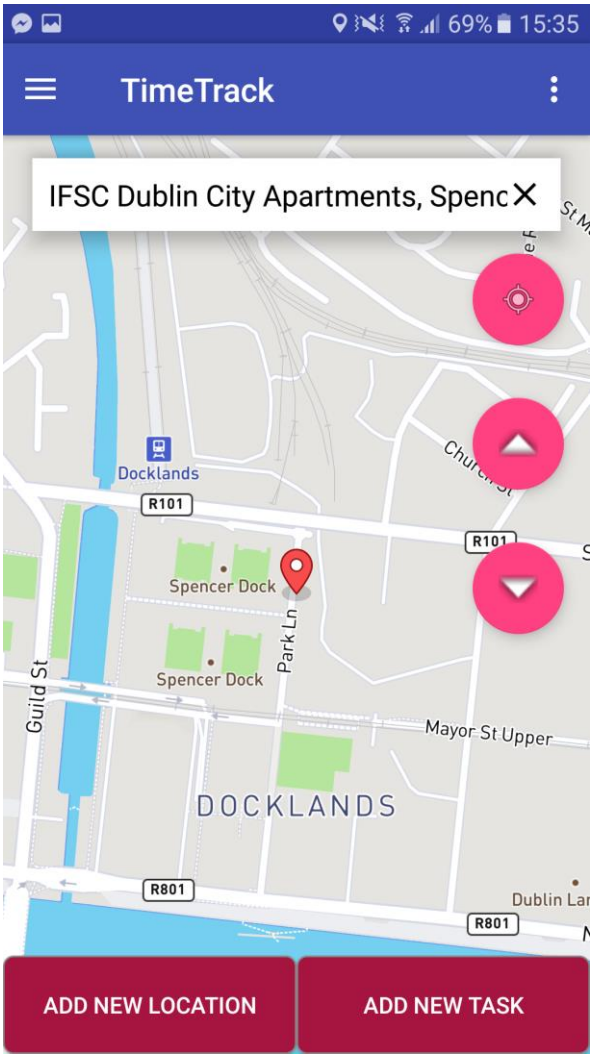


The add new location function is used to let user create his/her own zone on the map, the user can name the zone, and can make a description for the zone to distinguish with other zones. And the user also can define the radius of the zone for meters. After the location is created, it can be shown on the map by a yellow cycle. When the user carry the phone, and open the phone's GPS function, the app will auto to calculate the time spend in the location. After the user leave the location (yellow cycle), the time calculate will auto stop.

Every time after user create a location on the map, the location will be stored in the database, next time when user carry the same phone come in to the location, the time calculate will auto start until the user delete the location in the edit function.

2.4.5 Search address function



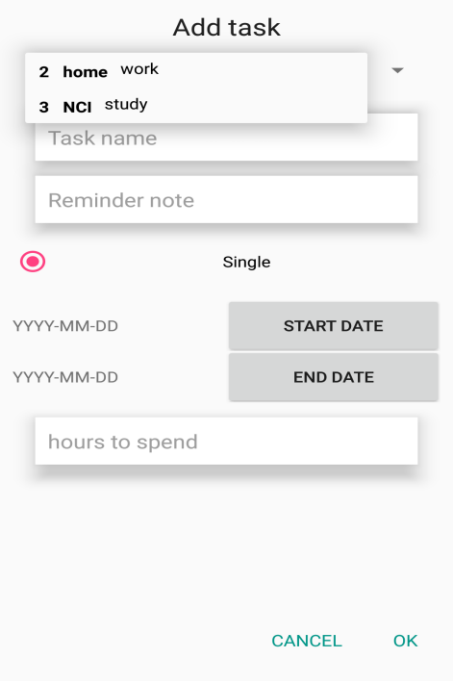


The search function can help to find some place on the map very fast. And the user should type in the right address name to search. The result will show on the map by red mark. The user can shrink down the map size to check more details.

And this time search result (the red mark) will disappear when next result is searched by user.

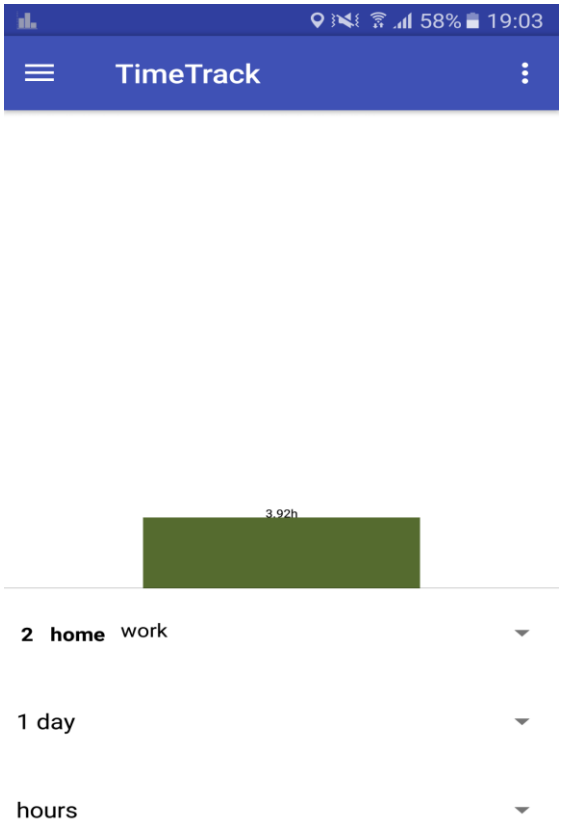
This will be very helpful when user is using the app and want find some place, he/she does not need log out the app and go to the Goole map, it can be done in the application, to bring more convenient to user.

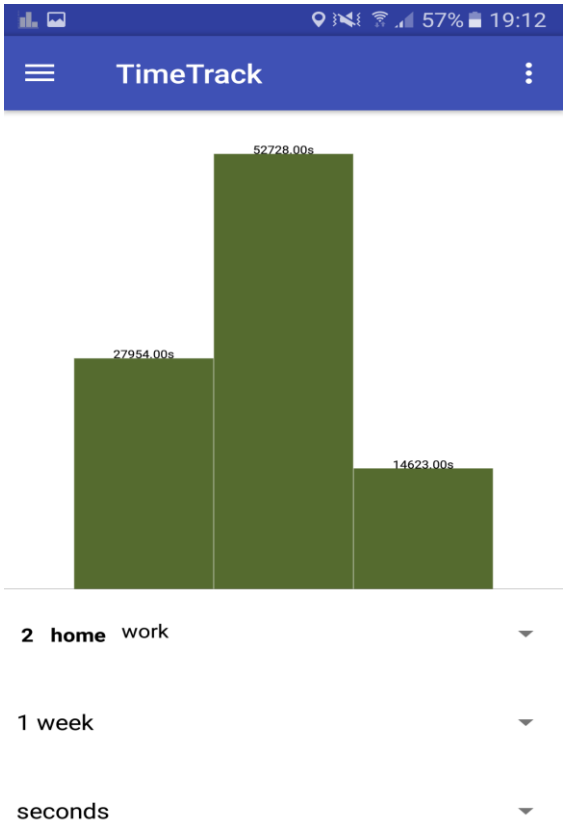
2.4.6 Add new task



The add new task will allowed user to make his/her own task, the task should base on the location that user added before, and can define the task name, reminder note. User also can set the task's start date and end date, the hours spend.

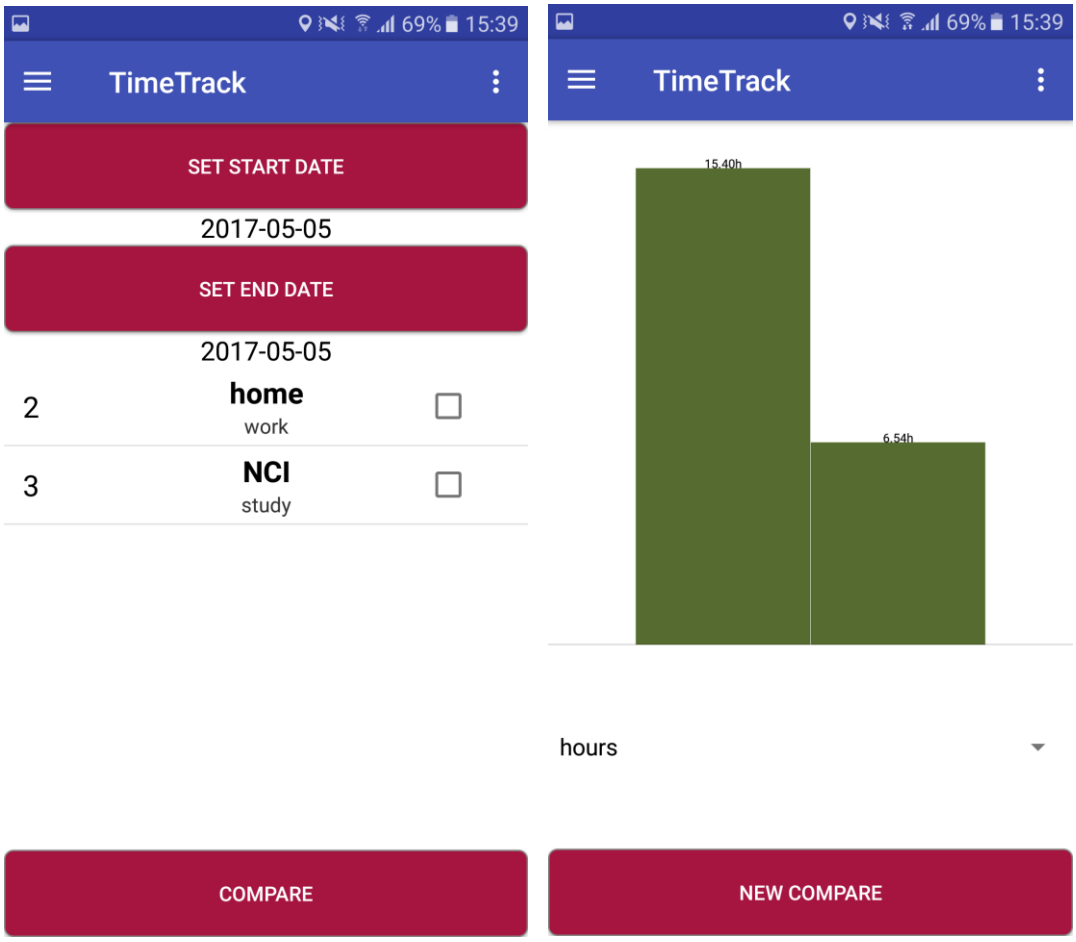
2.4.7 Stats 1 – My Time Result





The track time result can be seen by number and diagram, user can choose the location result to check in the first option. And the result can be seen by day, week, month and even year. Time can be changed from seconds to hours to show.

2.4.8 Stats 2 – Compare

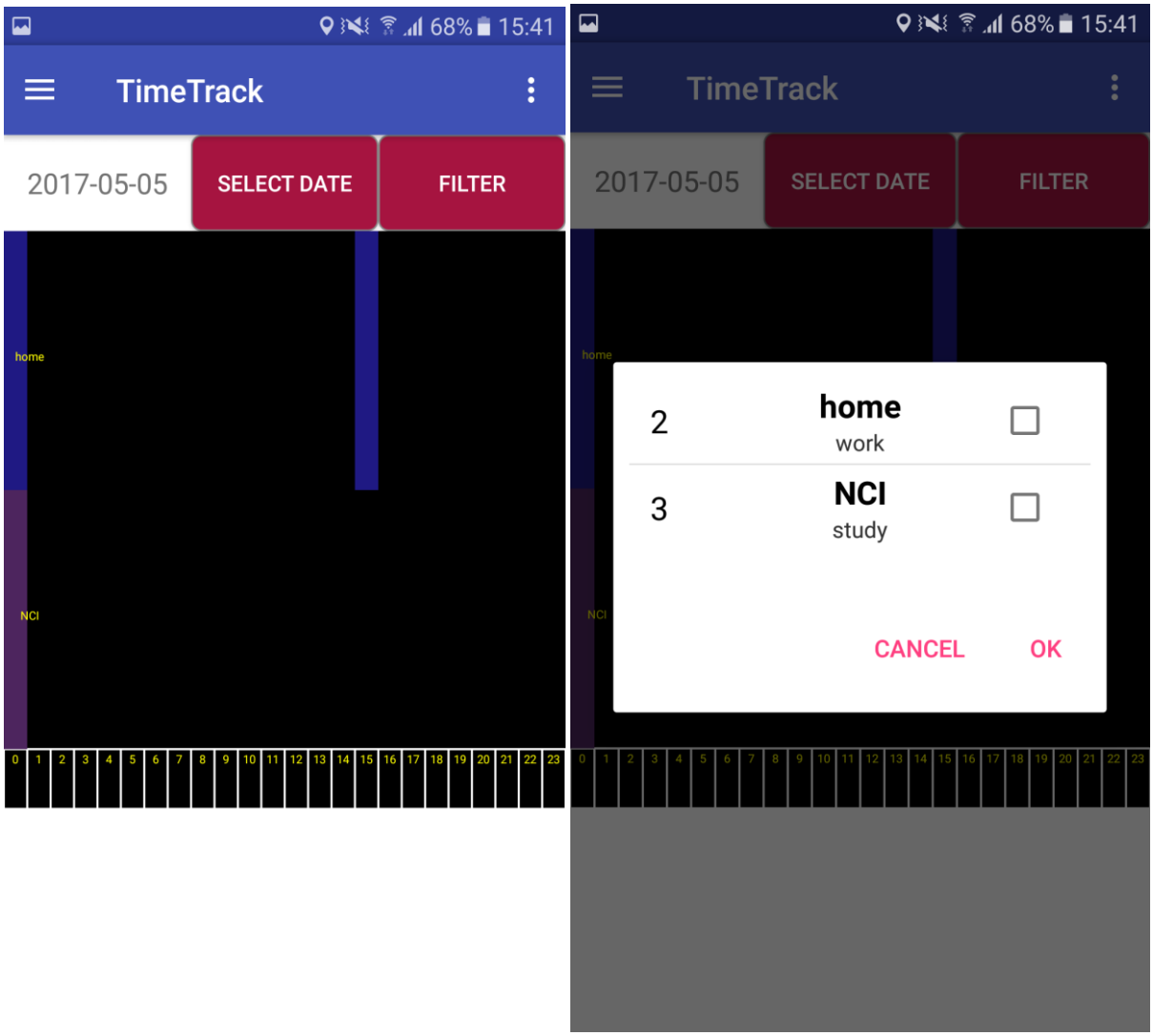


The compare function is used to help user clear to check two or more locations time spending result, will help user to manage time better.

In compare function, it let user to choose the start date and end date to compare, and the filter box can choose two locations to compare, the result will show by diagram and number to user. The time display can be chosen by seconds, minutes, and hours.

After the compare, the user can click the new compare button to choose others to compare.

2.4.9 Stats 3 – Time Distribution

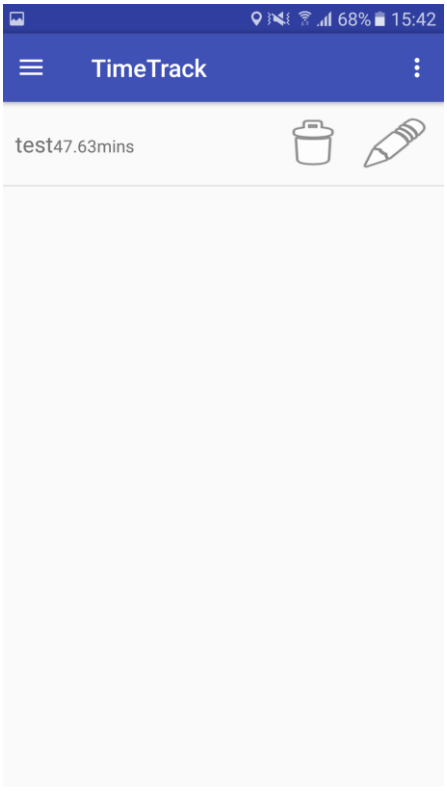


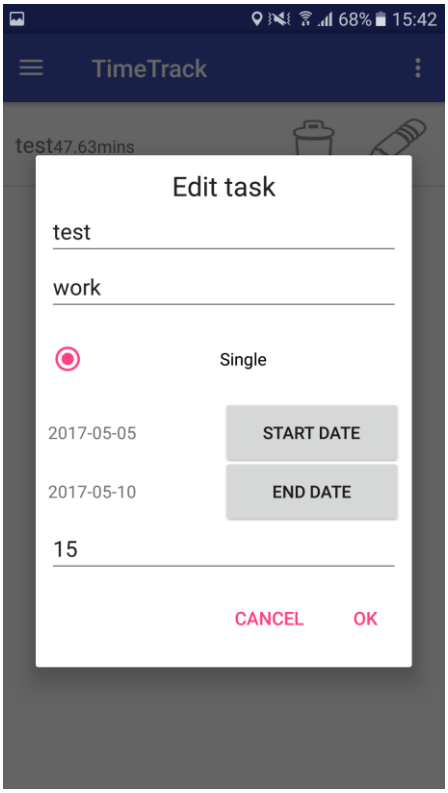
The stats 3 is for the time distribution diagram that can help user easy to check where is he/she in a certain period of time. The timetable under the diagram, from 0-23. User can check 24 hours in a day, where exactly he/she is.

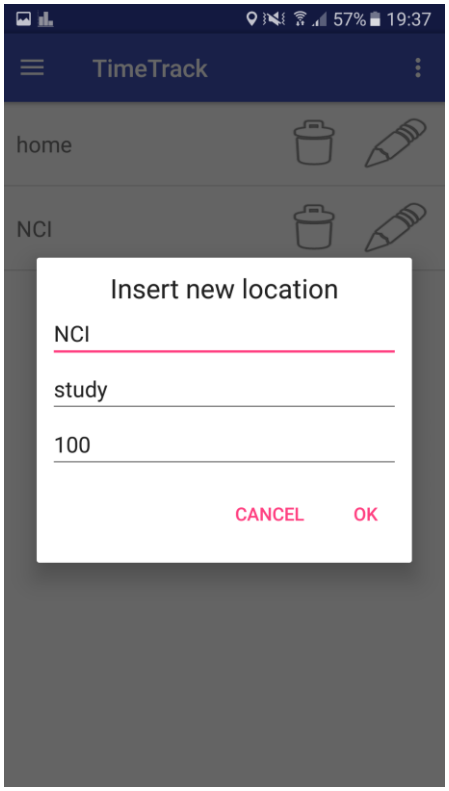
The filter function can help to choose which location want to show on the app. If user did not use filter to choose anyone of the location's name, all the result will be shown on the screen.

And user also can select the date to check that date's time distribution.

2.4.10 Edit task and location

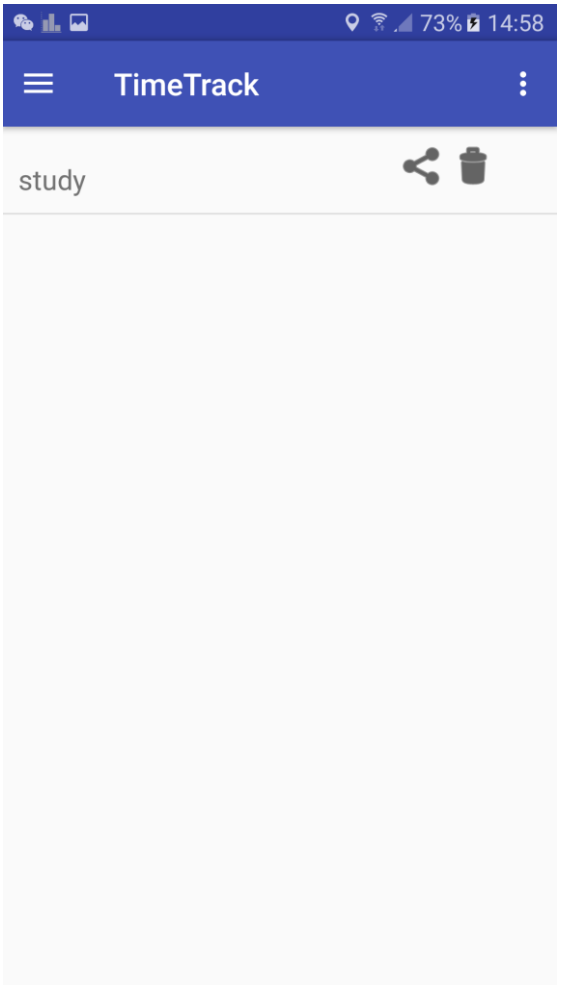






The edit function is helping user to edit the tasks and locations that he/she added before, and the user also can delete the locations and tasks in the edit functions.

2.4.11 Complete task share and delete



The complete function that include the share and delete function. When user added a new task, and finish the task. The task name will show into the complete list. User can also click the share button to share the task to his/her friends. If there has nothing finish, the complete list will be empty.

2.5 Testing

Testing of the first prototype was carried out by users. Each has provided valuable feedback which will be evaluated and implemented in the next application iteration.

Focused on each aspect of the application and noticed crashed and bugs for each event. It also provided with is a suggestion which they would have liked implemented in the next iterations. Some of these will be possible while I will strive to ensure that all bugs are addressed.

Test phase 1:

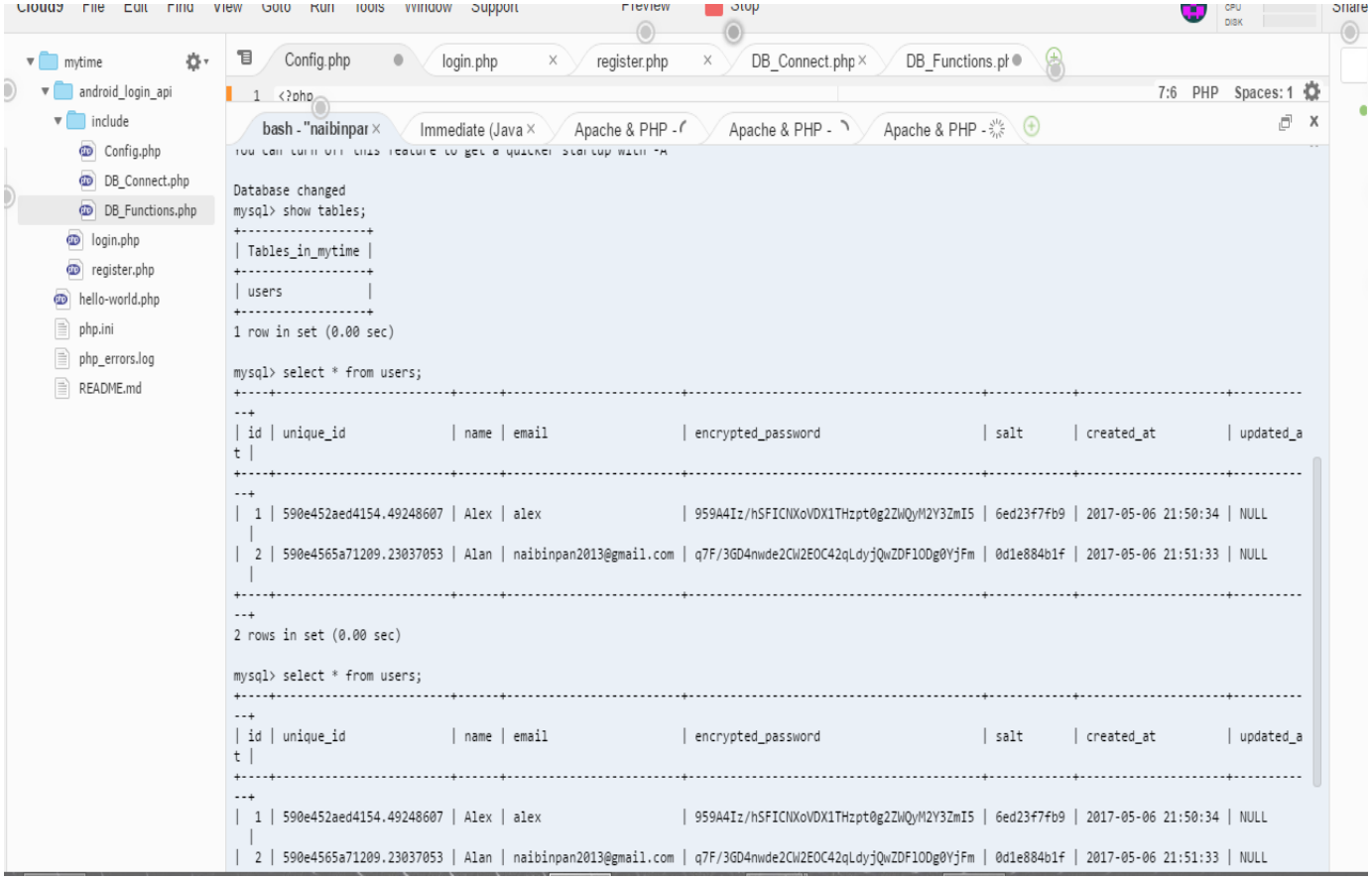
AREA	PROBLEM	*FIX*
Android version	Cannot run in Android version 4.0	Update the version to 5.0, and try the version up to 4.4 to 7.0, working well.
Google Map	Cannot load the map well, it takes very long time.	Delete some useless applications, and make sure the RAM is more than 550MB when run the application.
Google Map	Cannot work well on some phones in China.	Move Google Map API to MapBox API.
UI	There is no place to log out the user.	Add an option bar at top to let user log out and back to the log in page.
UI	“Search location” cannot seen in the search bar.	Change font colour from white to grey.
Map	Sometimes jump to another place, is not the current place.	By search, that is because, sometimes the phone’s GPS is very week, cannot track the user.
UI	In the time record result, the record number only can show by seconds.	Add a list that let user can change the time record number by seconds, mins, and hours.
Camera button	The camera button always move follow the drawer.	Put the camera button between two tables. Then the button will not move.
Register	The password cannot double check.	Add a re-type password place, and the user should type in same password in two places.
Register	Same email address cannot user twice but there has no alarm message to tell users.	Add an alarm message when the same email address use twice to register.” This email has been registered”
Log in	When user type in wrong log in details there just a grey cycle.	Add an alarm message to show “Please type in right log in details”.
Log in	Wrong title on the login page show” Nursey”.	Delete that title.

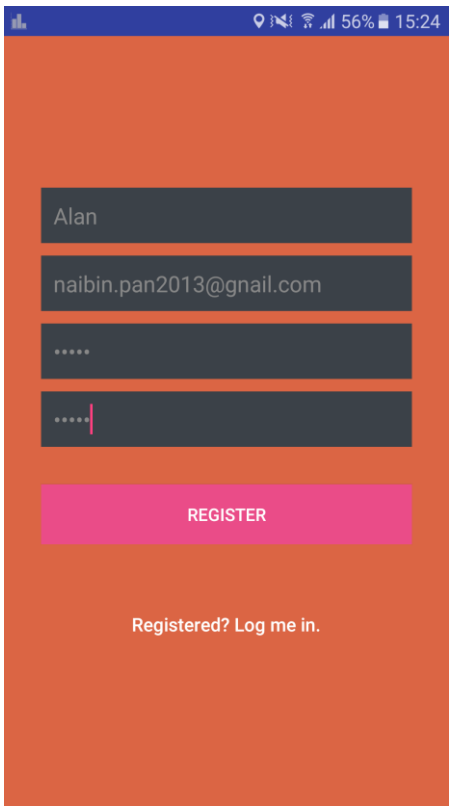
UI	There is no place shown the username after login.	Add “Welcome, xxx” beside the camera button.
UI	Task process cannot be checked	Add the task process in the edit place.
UI	Need add more design for the edit task.	Add the show/hide button to show/hide the task process hours.
Compare	There is nothing to show user what should do after compare.	Add a “New compare” button to user.
Delete	There is no place to delete the location/ task what user added.	Add the delete function in the edit part.
UI	The task process time is too close to the task name	Replace the task process time to looks better.
UI	Cannot check the date for the diagram.	Add a function that when user click the diagram bar to show the date.
Compare	Time only can show by seconds	Add the function that allowed user can change time shown by seconds, mins, and hours.
C9	Cannot make the register and login work	Project was set as private
Shake words	Shake windows move to much	Change the shake size on the screen.
Font size	The size of the number looks small on the screen.	Change the font size makes looks bigger and clear.
Stats 3	There is no function to let user can pick off some places that they do not want see on the screen.	Add the filter function beside the “Select data” button.
Stats 2	There has no place to let user set the compare date.	Add the set start date and end date for the compare.

Test phase 2:

Test the main functions to make sure there has no bugs in the application.

1. Register
2. Log in
3. Add location
4. Add task

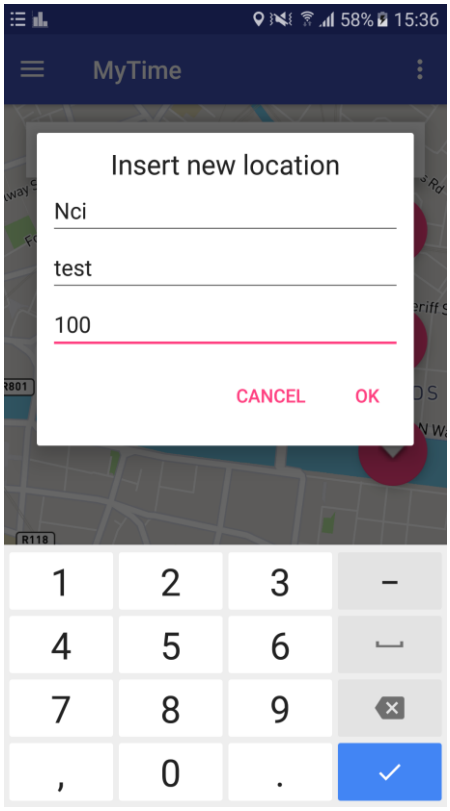

mytime
android_login_api
include
Config.php
DB_Connect.php
DB_Functions.php
login.php
register.php
hello-world.php
php.ini
php_errors.log
README.md
Config.php
login.php
register.php
DB_Connect.php
DB_Functions.ph
bash - "naibinpar
Immediate (Java
Apache & PHP -
Apache & PHP -
Apache & PHP -
Database changed
mysql> show tables;
| Tables_in_mytime |
| users |
1 row in set (0.00 sec)
mysql> select * from users;
id	unique_id	name	email	encrypted_password	salt	created_at	updated_at
1	590e452aed4154.49248607	Alex	alex	959A4Iz/hSFICNXoVDX1THzpt0g2ZWQyM2Y3ZmI5	6ed23f7fb9	2017-05-06 21:50:34	NULL
2	590e4565a71209.23037053	Alan	naibinpan2013@gmail.com	q7F/3GD4nwde2CW2EOC42qLdyjQwZDF1ODg0YjFm	0d1e884b1f	2017-05-06 21:51:33	NULL
2 rows in set (0.00 sec)
mysql> select * from users;
id	unique_id	name	email	encrypted_password	salt	created_at	updated_at
1	590e452aed4154.49248607	Alex	alex	959A4Iz/hSFICNXoVDX1THzpt0g2ZWQyM2Y3ZmI5	6ed23f7fb9	2017-05-06 21:50:34	NULL
2	590e4565a71209.23037053	Alan	naibinpan2013@gmail.com	q7F/3GD4nwde2CW2EOC42qLdyjQwZDF1ODg0YjFm	0d1e884b1f	2017-05-06 21:51:33	NULL

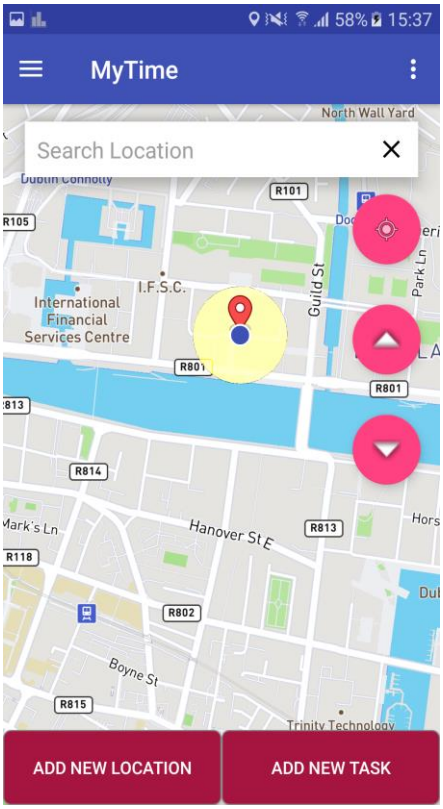

56% 15:24
Alan
naibin.pan2013@gnail.com
REGISTER
Registered? Log me in.


56% 15:24
naibin.pan2013gmail.com
LOGIN
Register here

After the register, the name,email, and password are store in the database and it can be log in to the application.

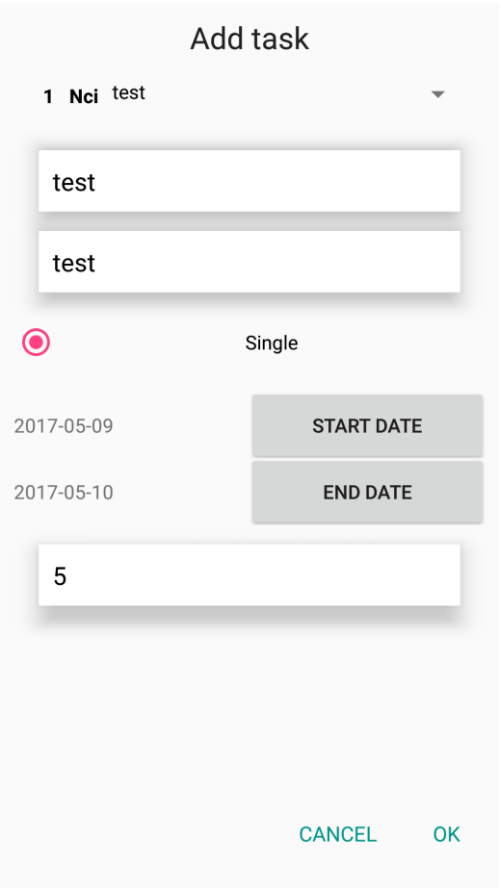
Add new location:

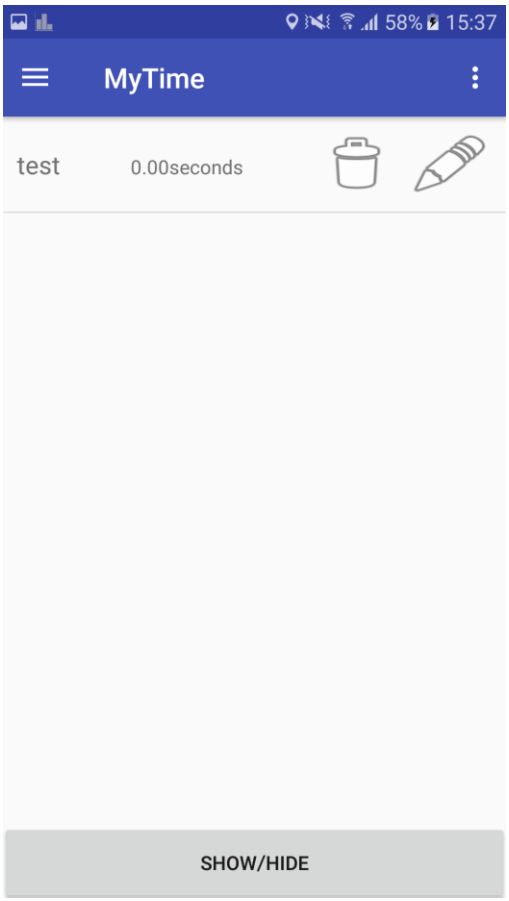




After test, when user finish the new location details, the new location adds successful and show by yellow cycle.

Add new task:





After test, when user finish the new task details, the new task can be seen at the edit task function list, and it also can be edit and delete.

By the test, there has no bugs for the main functions, and all the others works well by Alex test.

2.6 System Evolution

Aside from the testing phase, the evaluation was carried out on several devices from Android phones.

As part of the evaluation, an additional tester, Alex and other 6 friends, took charge of using the application throughout and provide a general user feedback.

An interesting finding was spotted while using the application in few below Android version 4.4, it has some errors came up. This however does not pose an issue when using on Android devices which version is up to 4.4 to 7.0, which is afterall the intended target device.

The recommended hardware requirements have been set to the below, basing the analysis on the different types of Android devices used and performance on each.

Taking the Samsung A5 2017 specs as the recommended settings.

PLATFORM	OS	Android OS v6.0.1 recommended.
	Chipset	Exynos 7880 Octa
	CPU	Octa-core 1.9 GHz Cortex-A53
	GPU	Mali-T830MP3
MEMORY	Internal	3 GB RAM recommended and at least 550MB free storage

Taking the Samsung S7 specs as the recommended settings.

PLATFORM	OS	Android OS v6.0.1 recommended.
	Chipset	Exynos 8890 Octa
	CPU	Octa-core (4x2.3 GHz Mongoose & 4x1.6 GHz Cortex-A53)
	GPU	Mali-T880 MP12
MEMORY	Internal	4 GB RAM recommended and at least 2GB free storage

2.7 User Feedback

I was quite happy with the feedback provided by the users which tried this application but the real test will, without a doubt be a lot harsher than what my friends were able to tell me. I feel that the less positive, yet constructive comments will be the ones users will be most vocal about once feedback in Google Play.

Here are the comments received from my friends:

"I really like this application. It started off a bit slow but it escalates as the application progresses"

"Great idea- really help me in everyday that I could easy to check my time allocation without notepad."

"I really get some fun in the task function, it will be better if can add some notice sound"

"People will enjoy not having to pay for in-app content but this also means that the idea cannot be monetized as is"

" I am very excited the “add friends" function coming up, that will be great idea to meet more friends”

"I do like this app, because I have never use some similar application before, and I am a busy man, this application is truly help me in everyday when I go everywhere"

“If can add more pics or more design of the application will be better.”

3.Conclusions

Opportunities of this project include:

- Clear to see the daily, weekly and monthly time spend details by diagram and data.
- The users can make the plan for themselves, and the app will alarm the user before 2 days. Like make a plan to GYM: 5 days for 10 hours, and the phone will alarm the user before 2 days, and says still have like 4 hours to GYM.
- The user can compare between any days, any hours, and see what part are wasting the time.
- The system should be user friendly. Any user with a basic knowledge of smart phone & technology should be able to use it. Conversely, if a person does not have even basic knowledge of smart phone, but who observes the application in use from an objective position, they should be easily able to grasp the use methodology of this application/software.
- The app will be allowed the user add friend in the further development.
- There are creative writers out there who have some astonishing ideas. These ideas are not always best conveyed through books and this is when a writer should look at other mediums. What I tried to achieve with this application, was to deliver my (extra-college) work, via manage own time experience that people can interact with. An application if you will.
- In my opinion, when someone enjoys working on a product, the enjoyment will come through to end users. The fact that I have thoroughly enjoyed developing this product reassures me that there will be users out there who will love the app.
- I hope the app can help some users who are very busy, but they still want get some hours to spend with their family, pets, and friends. This application can help the user manage their time better than before and save more time to do more.

4. Further development or research

After working on this project for the past few months, the next phase will be to create a port for the App Store. However, before I can do this, I would like to first see what users will think of this product.

While the feedback and comments of the testers are critical to the development of the project, I still think that since they are also my friends, we still think they are opposed to more direct feedback.

Many successful application nowadays (such as Facebook – Messenger, Google Map- My Google Map) all come with a companion application. Even some games have the companion application, the companion application is to help users can understand the application better, or more convenience and have more fun on the application.

I will be releasing in the future thus turning the companion application into a marketing platform for my future projects in application development.

The system is open to evolve, over time extra features may be added to the system such as introducing an “add my friends” feature as suggested by one of our survey takers. The app will allow that the user can share own data with friends. And when the user creates the zone and if there has anyone else create the same zone with the user, that the user is allowed to check his/her information and will allowed to add friend with him /her then. My idea would be to leverage the JSON files and link them to an Android application which the users can use to compare their task progress with friends who might also be using the application.

I was thinking whether to do a backup restore for the database, that's why I want do a synchronise function in the drawer. My plan was to add backup/restore. It's a good option but high demand for c9 server. Most of the time just back up or restore can turn c9 off.

End to end encryption of app should be added in the future to keep user data safe and secured.

I believe that this web app will be beneficial because of its commercial potential, particularly given the amount of people that have smart phones.

5. Reference

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   https://www.mapbox.com/android-sdk/api/5.0.2

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5. Cloud 9 (2017) [online] Available at:
   https://c9.io/?redirect=0

6. Project Proposal

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BSc (Hons) in Computing

Data Analytics

19/10/2016

- **Objectives**

For this year Software Project, I am going to do an Android phone App and I called it My Time.

I want this app can help users to calculate their time spending.

Firstly, the app will show the Google map, where are you now, and will have a mark on the map representatives the user, when user move, the mark will move on map at same time.

Secondly the user can create a zone for a square (100 square metters-1000square meters), and the user can create this zone's name: like college library, gym, Starbucks .... any name you want. Then the app help user to calculate how long stay in this place. When the user leaves this zone, the time calculate will stop. The app will save the zone that the user created before for next time use. The user can check the result for how long spend in this zone. And the analysis function will show more data details by using diagram for any hour, day, week, month.

Then after a day, the user can see the whole days' time spending diagram (Bar chart and Line chart).

If you create too many zones, but you do not want see them all in My Data, that is ok, the Filter function can be used by cancel any zone that you do not want show on My data.

Finally, the most interesting part is the user can update their own photos in the user setting function.

For this app's future, I would like to learn and make it work on IOS and web part, by using swift 2.0, and the web by using HTML 5/ CSS3 for the webpage, JS will use JQuery framework.

- **Background**

Time is flying, life is busy, some people always confuse where is my time going? And some people always ask: Why is my time always not abundant?

We work, study for every day, and we all forget the most important thing that is manage time. If you want manage your time well, firstly, you have to know your time spending.

You do not need worry anymore, because my app will help you.

The main reason I want do this app because I want people can manage their time more and more better.

For example, in the first week if a student in college goes gym for 4 hours, this app will calculate that time spend. Them knowing this will make them proud and hopefully more motivated to go again next week. Students can set goals, if the first week they went for 4 hours, next week they set a goal to go for 5 hours. This can be the same as doing work in a lab. This app will calculate the time in the lab and it will tell how long students attend in lectures. This is a good way to keep track for yourself and to let u know if you are spending enough time in class.

This app the help you calculate time spending and have a look, find out which part you should spend less time or more time. Make our life more efficient and easier.

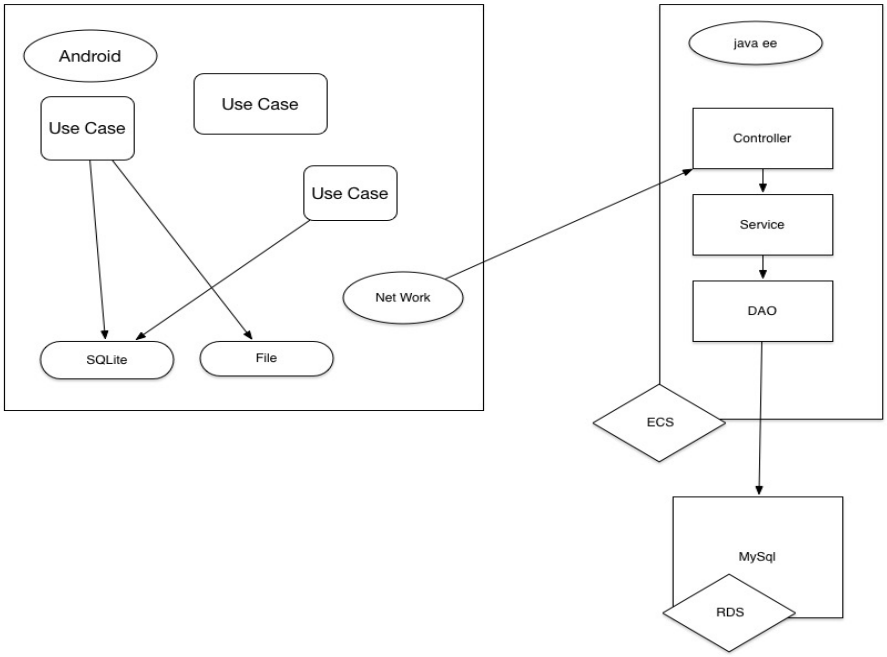
- **Technical Approach**

Main research and study is for Google map API, android native development, and the data structure design and development.

For the requirements, I am going to make a questionnaire to 50 people and find out what is the favourite function of the app that the user want. And I will find some book for the Phone App business requirement.

For the user and time data, I am going to save on locally for user, using android's SQLite as the database. At the same time, in some operations, also try to read and write files, as a persistence layer of another practice.

The structure of the project is:



- **Special resources required**

  1.Android Phone for project test.

  2.Cloud Service

  3.Google API

- **Project Plan**

TASK	PRIORITY	DAYS	START DATE	FINISH DATE	DUE DATE
Project Proposal	Medium	6	15/10/2016	21/10/2016	21/10/2016
Requirement Spec	Medium	12	28/10/2016	10/11/2016	11/11/2016
Coding the Project and Test	High	Throughout project			
Make Project Prototype for Presentation	High	3		31/11/2016	02/12/2016
Mid-Point Presentation	Medium	1		17/12/2016	16/12/2016 17/12/2016

Coding the Project and Test	High	Throughout project			
Showcase Materials	Medium			April 2017	April 2017
Final Project Hard Copies Documentation	Low	1		May 2017	May 2017
Software & Doc Upload	Low			May 2017	May 2017
Project Presentation	High	1		May 2017	May 2017

- **Technical Details**

1. Android 4.0 or more
2. Java
3. Spring MVC
4. MySql
5. Database Framework Hibernate
6. Development for using Android Studio

- **Evaluation**

  Write curl script interface testing java background, write unit tests and end at Androids' background core code. Use Monkey test for stress test carried out by the mobile phone side. The load runner recording a script on the background stress test.

_____NaiBin Pan 21/10/2016_____

Signature of student and date

7.Mothly Report

Reflective Journal

Student name: NaiBin Pan

Programme : BSc Honours in Computing

Month: 1st month Sep-Oct

My Achievements

This month, from first week, I got what should I do for the finial year software project class. Then I was thinking of my finial year project idea, and I made some research for what I want to do a Phone App for students.

My contributions to the projects included the online research for Phone App design, data analysis project design, and the structure of Phone App. And I made a timetable for my project plan.

My Reflection

I felt, it worked well to the teachers meeting, they are happy with my idea, and they think it will be very cool if I can make it work. And from my App, it will help students to calculate how long do they spend in college, eg: library, gym, atrium… even some buildings near to college. Then they will get report every day, every week, every month. Then students can clear to see their time spending.

However, I was not successful in some parts I have not touch before, like Google Map design, GPS, and some technology skills. I will keep learning on these parts.

Intended Changes

Next month, I will try to talk to my supervisor, and hope my supervisor can give me some help for this project like what should I go to learn and how can make this App work well. Then I will start my project as soon as possible, and make a proposal for it.

I realised that I need to learn more technology skills and more parts of Phone App.

Reflective Journal

Student name: NaiBin Pan

Student Num: x12128201

Programme : BSc Honours in Computing

Month: Second month Oct-Nov

My Achievements

This month, I finished my proposal for the project and have already start to make the user interface by using the makeup tools online and design the use case diagram for my project .

My contributions to the projects for this month included the online research for the phone app UI makeup design ,use case diagram design, how to use Google API for the project and add my own function into it , and the structure of Phone App. I followed my timetable for my project and everything finish on time.

My Reflection

After I met my supervisor, I felt I should start to focus on the GPS function for my project , because that is the main part of my project , lots of functions is based on the GPS, but unhopefully , I never touch the GPS function before, so I think I should start to study the GPS as soon as possible. Make sure the hole App will work fine on time.

And for the next meeting with my supervisor I should prepare better than this time, I made a bad presentation, first few minutes, my supervisor did not even understand what is my project .

Finally, I should make the requirement very good.

Intended Changes

Next month, I will try to talk to my supervisor, and hope my supervisor can give me more help for this project like do I need add more functions for this project or is fine now. Then I will start to learn the Google API and GPS technologies.

I realised that I need to learn more technology skills and more parts of Phone App.

Supervisor Meetings

Date of Meeting: 1/11/2016

Items discussed: What is my project , what functions does it has, and what should I learn and research firstly.

Reflective Journal

Student name: NaiBin Pan

Student Num: x12128201

Programme : BSc Honours in Computing

Month: Third month Nov-Dec

My Achievements

This month, I finished my requirement for the project and have already start to code the project and design the user interface for the app .

My contributions to the projects for this month included the online research for the phone app UI makeup design ,how to get GPS function into the app, is possible to make the GPS function to the 3D, like the second floor's classroom should not same with the first floor's classroom, how to use Google API for the project and add my own function into it , and the sever of C9. I followed my timetable for my project and everything finish on time.

My Reflection

After I met my supervisor, I felt I should start to focus on the GPS function and for my project , because that is the main part of my project , and I have find out some document and did lots of online search of the GPS function, but unhopefully, from what I read that is possible to make the GPS can do indoor following , but that is not from official sources, so cannot guaranteed for this function.

And for the next meeting with my supervisor I would show the app that I already have for the register function and sing in function work.

Finally, I should make the technical report and mid-point presentation very good.

Intended Changes

Next month, I will try to talk to my supervisor, and hope my supervisor can give me more help for this project like do I need add more functions for this project or is fine now. Which sever is more better for support the phone app.

I realised that I need to learn more technology skills and make the UI design better for the app.

Reflective Journal

Student name: NaiBin Pan

Student Num: x12128201

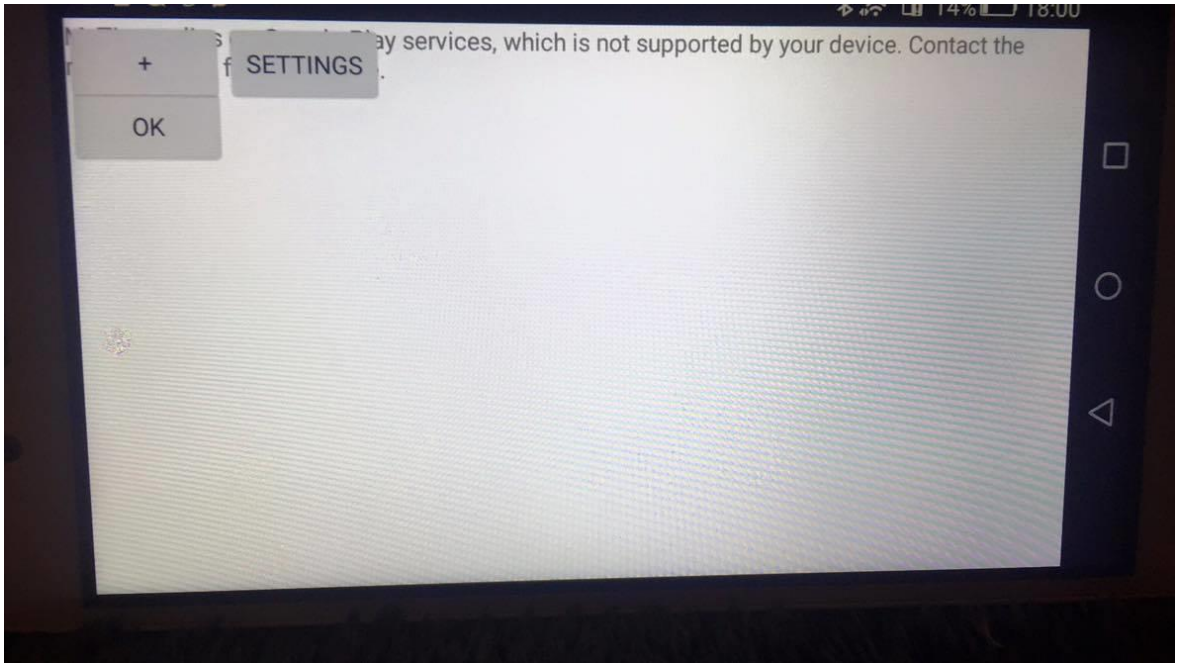
Programme : BSc Honours in Computing

Month: Jan-Feb

My Achievements

This month, After the exam, I work back on the main project, and tried to start work on the time calculate function for my app. And I try to test it on the Android phone, there has some errors come up the project and have not fix them all. And there is a big problem that is the app cannot work without Google Play Server.

I did lots of search for it and find out the way to make it can works without Google Play Serve.



My contributions to the projects for this month included and got a few errors and distance calculator is a bit off, and main thing is to get distance in background the right way. And then add on draw so you could see a graph was trying to make the service use as low battery as possible, all trackers are such battery drainers.

My Reflection

This month I did not do too much search for how to make the diagram for the time result, and that is the main part for this app, like after the mid-point presentation, I need focus on more data analysis functions to suit my class.

Intended Changes

Next month, I will try to fix the errors and make it can works without Google Play Server, then I could make it works on my phone, and show it to my supervisor. Then he could give more advices for my project.

I realised that I need to learn more technology skills and more parts of Phone App.

Reflective Journal

Student name: NaiBin Pan

Student Num: x12128201

Programme : BSc Honours in Computing

Month: FEB-MAR

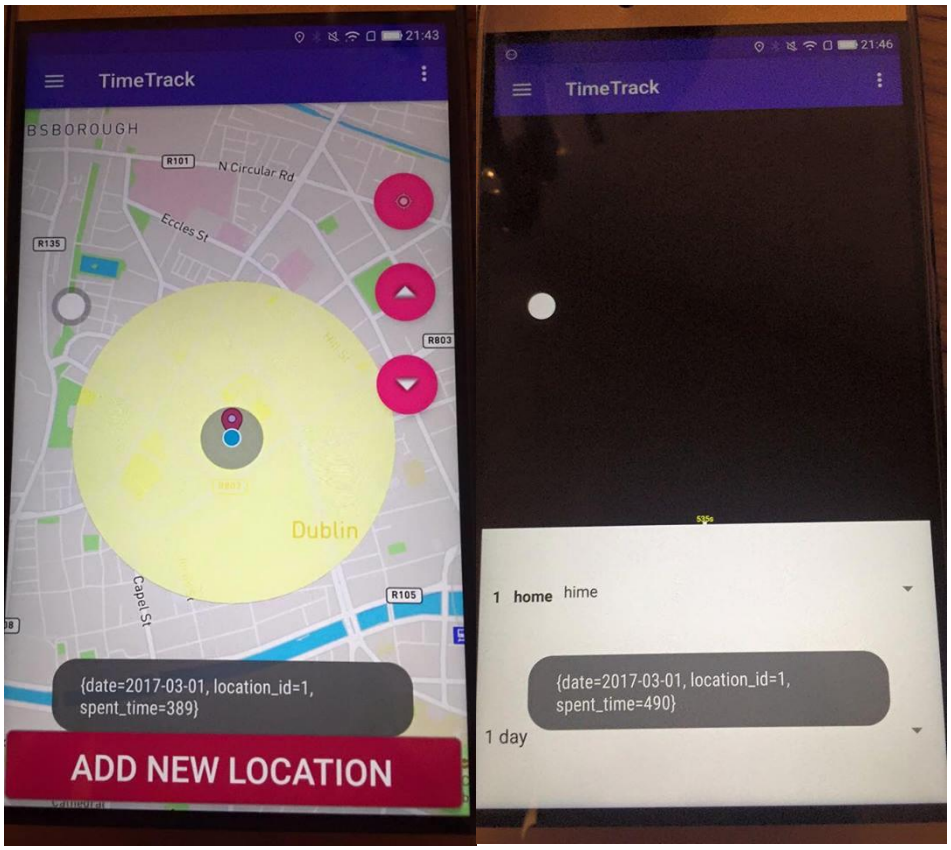
My Achievements

This month, i was working on the Mapbox design and the GPS functions, but i meet some problems there like, I'm getting dates by date locate and comparing 2 on each cycle if the user change date while cycle in progress it should add crazy time . But once settings setup I'll change from locale to static time variables that will run on run able thread.

The good news is the Time is calculating now. For each location time is being recorded.

I had the column called current_date and was using where to get Currentdate=date('now') by sqlite3 docs that's the way.But instead it's date(date)=date('now')

So database is working now that i can fetch records easily. Stuff like date('now','-1 month') for last months records.



My contributions to the projects for this month included and got a few bugs and distance calculator is a bit off, and main thing is to get the GPS and time calculate working now. And then add on draw so you could see a graph was trying to make the service use as low battery as possible, all trackers are such battery drainers. And will do the filter and delete functions to help user manager the data more easily.

My Reflection

This month I did so much work for making the time calculate function works and can be show in the diagrams, and that is the main part for this app with lots of math and logic.

Used mapbox used sticky service graph is done with customer view that check criteria for best GPS and setup listeners inside service and use runnable thread for samples

Location manager gets called by 5seconds and if GPS disabled gets recalled on 5mins.

Fragments setup to Minimise activity clusters and instead inflate.

Intended Changes

Next month, i will finish the filter function and the plan make function to make the whole app looks nice , and try to make some videos go different place , and let i can show to my supervisor that the app data is working fine then.

Supervisor Meetings

Date of Meeting: 03/03/2017

Items discussed: What is my project has tight now, and what should i do for next step.

What should i show in the final presentation.

Reflective Journal

Student name: NaiBin Pan

Student Num: x12128201

Programme: BSc Honours in Computing

Month: Mar-Apr

My Achievements

This month, i was working on the stats design and the task making function. I added the delete function for the location mark when user long click the mark on the screen and will get the alarm box. And the compare function is works fine now, that the user can click the box to choose which data want to compare. And then from the diagram, will be easier to check.

Another stat I did for the app is I made the 24hours table to show the place that the user made. This will help the user clear to check when and where did he/she in.

But I met a problem for the map function that the resuming map state is a problem even sliding menu was recreated each time you changed between stats and map loading is heavy on the app that need to be saved its instance and not let it get destroyed and when popping stack then resume it.

My Reflection

The whole app's main function is working fine now, but still has some parts need to improve. Like the time calculate need can be changed in seconds, mins and hours by users. And for the make task function that need a list for what the user made and allowed the user to delete someone of them. And for the main part is to make the stats diagrams looks clearer and do more UI design for it.

Intended Changes

Next month, the exam is coming and so I would like focus on the exams firstly for make sure nothing fail. Then after the exam I will back work on the project to finish the functions and make the whole app run smooth. Fix the bugs what I test and found.

And need to make few short videos for the presentation and find out a tool that can allowed when I show the app on the phone, it can also show it on my laptop screen.

Last part is to finish the final report for the project and make a hard and soft copy for it.

Supervisor Meetings

Date of Meeting: 05/04/2017

Items discussed: What is my project looks now, and what should i do for next step.

What should i show in the final presentation.